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LECTURES
ON
MEDICAL JURISPRUDENCE,
NOW IN COURSE OF DELIVERY
AT THE
UNIVERSITY OF LONDON.

BY PROFESSOR A. T. THOMSON.

LECTURE II.

Definitions of "Evidence" and "Testimony."—Requisites for Medical Witnesses.—Three kinds of Examination.—Varieties of Evidence.—Violations of Professional Confidence in the Witness-box.

GENTLEMEN:—It is a trite saying, that medical men, even the most eminent in the profession, are generally the worst witnesses that appear in courts of justice. As this cannot be denied, it may be advantageous to bring before you a brief commentary on the law of evidence, and its application to that branch of medical education upon which we are about to enter, namely, MEDICAL JURISPRUDENCE.

It may be asked, What is "evidence?" In the usual acceptation of the term, it is that which is submitted to a court or a jury, to enable a decision to be formed upon any question in dispute; it embraces neither *arguments* nor *comments*, but it implies a mere statement of facts. All evidence, therefore, whether general or medical, must necessarily be alike; but the *testimony* which is required from medical men differs, in several respects, from ordinary testimony. Before pointing out this difference, let us enquire into the distinction between evidence and testimony.

In a philosophical point of view, evidence is defined to be "a quality in things, whereby they become visible and apparent to the eyes, either of the body or the mind:" thence any "thing is said to be morally evident, so far as we have a distinct notion or knowledge thereof by unexceptionable witnesses." But evidence in law, as I have already hinted, "is any proof, whether by testimony by men on oath, or by writings or records, which makes the point at issue *evident* to a judge or a jury." Evidence, therefore, embraces testimony, which is defined, "a serious intimation from another, of a fact, or an observation, as being what he remembers to have seen, or heard, or experienced." Now, in what respect does medical testimony differ from ordinary testimony, which, if given upon oath, must be received as evidence? The chief point of distinction is this:—Besides matters of simple *perception* and *observation*, medical testimony embraces *opinions* respecting circumstances which have not been seen by the witness, but of which he is capable, or supposed to be capable, of judging.

All testimony which is given by persons who have seen the facts, involves what is termed *direct* evidence, or such as, as has been quaintly remarked, enables a judge or a jury to "perceive the facts through the organs of the witness." The facts must have been seen by himself, for if the knowledge he possesses of these have been acquired from the information of another person, however sacred the word of that individual is known and acknowledged to be, the testimony thus delivered cannot be regarded, and is not accepted as *evidence*.

But evidence may be *presumptive;* that is, the witness may not know the fact *positively* or *directly*, but presume it, or infer it, from one or more facts or circumstances which are known. The greater part of medical evidence is presumptive; it is chiefly the result of derived *experience*, consisting "not only of all the *experiences* of others which have been communicated to us, but of all the general maxims or conclusions we have formed from the comparison of particular facts attested."* The value of such evidence, therefore, must be in the direct ratio of the value of the authorities upon which it is founded, for unless the truth, and the propriety of the testimony of those from whom the authority is derived, be fully admitted, it is valueless, except the witness can prove it by the weight of his own direct experience.

* Hume—Dissertation on Miracles. Part I. Sect. I.

A question naturally arises out of these remarks, namely, What circumstances are essential for affording complete and accurate testimony? In reply, I need scarcely mention *veracity;* that is essential to every species of testimony; but besides veracity, one of the most important requisites for a medical witness is *attention.* This will prevent him from attempting to reply to questions before he fully comprehends their import, and consequently will guard him from aiding, unintentionally, the triumph of falsehood; or from being so entangled in the net of legal subtlety, as to incur "unmerited censure for testimony which he never intended to give." It shields him, under every circumstance, from the scrutiny of the judge, the brow-beating of the barrister, the exposure of the public press, and from a load of undeserved scorn and contempt, that might most materially injure his reputation and his fortune. But the medical witness should be attentive not only in listening, and in preparing to speak, but also in speaking; "he must bear in mind that what he says is to stand upon record as signifying what he means." It is too much the practice to misinterpret the language of medical witnesses.

The next requisite for a medical witness is *memory;* but, as this may prove fallacious, either from the weakness of the act of perception, independently of inattention, or from lapse of time, every circumstance in the occupations of a medical man, likely to involve legal enquiry, should be committed to writing, which, besides preserving an unvarying record of the fact, enables him to refresh his memory on collateral incidents, in proof of the point in question, by associations which are almost inseparable from it.

It is not my duty to enter into any explanation of the laws which regulate those associations: they occur daily. "The mind is prepared to expect them; it looks for the future association of circumstances, because it has been accustomed to find them associated." Upon this principle, in fact, all philosophical knowledge ultimately rests. The refreshment of the memory, therefore, by a few written notes, restores to it a series of facts, associated with those recorded, which may prove of the utmost importance in evidence. Written records also prevent the possibility of imagination playing the part of memory, a circumstance which is apt to occur when no records of facts are preserved.

The last requisite essential in a medical witness is a condition which implies that strength is added to his evidence by education, and a sense of greater *responsibility*, and more *sensibility* of honour, than are usually attributed to witnesses with the ordinary level of moral and intellectual qualities. Nothing, certainly, can be more favourable to justice than enlightened witnesses, able to express themselves with the highest degree of precision which the subject admits.

I have said, that the first requisite in evidence is the veracity of the witness. He must be of unimpeached *integrity*, for without this qualification he cannot be regarded as either *willing* or *able* to declare the truth. This is especially requisite in a medical witness, whose evidence is chiefly presumptive; and it is of great importance both to the individual and the profession, that nothing should appear in his testimony which, in the smallest degree, could induce a jury to suspect that the *expectation of contingent benefit or contingent evil* can operate as a temptation to perjury. It is the business of the jury carefully to estimate the degree of influence by which the testimony of a witness is likely to be corrupted, and to determine whether, under all the circumstances, he be the witness of truth.

A witness must possess the *ability* to speak the truth,—a circumstance which must depend not only on the opportunities which he has had of observing the facts, but on the accuracy of his powers of observing, and the faithfulness of his memory in retaining them, when they have been once observed and known. These qualifications are common to, and required from, all witnesses; but as medical witnesses are required to testify to opinions which are wholly or partially the result of reasoning, exercised upon particular circumstances, it is obvious that the reasons of a witness for drawing his conclusions, are of most essential importance for the purpose of ascertaining whether his conclusions be correct. I need not say that this remark applies, with peculiar force, to all questions of skill and science, and it is always taken advantage of in the cross-examinations of medical witnesses. Thus, a practitioner of medicine states that there is a predisposition to lunacy in a person on whom a commission is holding: he must be well prepared to support this opinion by cogent reasons, otherwise his evidence is not only thrown out of court, but his professional character is lowered. Even when the reasons are good, the evidence may be weakened if, by the cross-examination of an acute barrister, it is found that the means and the opportunity of the witness for making observations have been few; that the circumstances which excited and engaged his attention were common-place, or not likely to excite particular attention; and that his reasons and motives for attending to them were accompanied by any thing like suspicion of improper motives.

In detailing in evidence conversations or expressions, it is essential never to insist on the accuracy of memory: such evidence is always justly regarded with suspicion, as being *easily* fabricated, but contradicted with *difficulty;* and, to say the least, it is considered to be of the weakest kind.

In every trial, and before every tribunal, there are *two*, sometimes *three*, distinct examinations, one is termed the *examination in chief*; another, the *cross-examination*; the third, the *re-examination*: all of them are taken upon oath. Before the oath is administered the witness may be asked whether he believes in the existence of a God, in the obligation of an oath, and in a future state of rewards and punishments? If he do not, he cannot be admitted to give evidence. In all ages much reliance has been placed upon hedging testimony by some sacred obligation; and had experience demonstrated that the religious sanction had the effect ascribed to it, the solemn invocation of the name of the Deity would be the most decorous method of binding a witness to truth. But as men are too apt to distrust threatened retribution at a distant period, they, consequently, try to evade the danger by reservations, and other unworthy means: thence legislators have denounced the penalties of the law against perjury. Oath have been too lightly administered, although it is regarded "as a solemn invocation of the wrath of the Deity upon the witness if he do not declare the whole truth as far as he knows it."

As the oath is intended to be binding, every person is sworn according to the faith which he professes:—a Jew is sworn on the Pentateuch; a Turk, on the Koran; a Scotch Presbyterian, simply by holding up his hand without kissing the book. In all criminal trials, the rank of the witness is no exception against the administration of an oath; a judge, a peer, cannot refuse to be sworn before giving evidence; in civil actions, however, the affirmation of a Quaker is admissible.

All examinations in criminal cases are *oral*, this kind of testimony being more proximate to the fact than written evidence, which itself requires proof. Both the chief and the cross-examinations are oral.

The *examination-in-chief* is conducted by the counsel who calls the witnesses; and here no leading question is permitted to be put, as nothing is more essential to justice than to prevent the witness from being prompted. This restraint on counsel is undoubtedly just in regard to all questions to which simple affirmation or negation is conclusive—the *yes* or the *no*; but, in examinations respecting material facts, a barrister who is examining in *chief*, is allowed a certain latitude in order to lead the mind of the witness to the subject of enquiry; and this is of the greatest importance to professional men, as, in cross-examination, his means of knowledge of what he has stated as fact, may be fully investigated; and, if he have not sufficient and adequate means of knowledge, his evidence will be struck out. You should also, Gentlemen, be aware, that although a common witness, who falsely swears what he merely thinks or believes, but has not seen, may be indicted for perjury, yet, in professional evidence, which often cannot extend beyond opinion or belief, what is truly your opinion can be received; and the contrary may be elicited by cross-examination.

Now, with respect to the examination-in-chief, suppose a medical gentleman standing in the witness-box after being sworn to give testimony in a trial for murder by poison. The answers which he gives in the examination-in-chief will regulate the questions put to him in the cross-examination. To illustrate this remark I may refer you to the trial of ELIZA FENNING. In the evidence of the medical attendant of the family, he says, "all the symptoms attending the family were produced by arsenic; I have *no doubt* of it by the symptoms." Again: to the question, "Will arsenic, cut with a knife, produce the appearance of blackness upon the knife? his reply was, "I have *no doubt* of it." Need I say, Gentlemen, how very completely this witness would have broken down in a proper cross-examination by the counsel for the prisoner.

The object of *cross*-examination is to sift evidence, and to try the credibility or the knowledge of the witness, his power of discerning facts in the first instance, and his capacity for retaining and describing them in the second. It is in cross-examination that the acuteness of the counsel displays itself, and the weakness of the witness is made apparent. This is most unequivocally demonstrated in the report of the trial of ANNE BARBER, for the murder of her husband by poison, at the York Assizes, in August, 1821, published in the *Courier* Newspaper of 14 August, 1821. An ignorant practitioner, who, in his examination-in-chief stated, that the poison was arsenic, because, among other tests, the nitrate of silver precipitated it green! is held up to contempt in his cross-examination, in which he is led to acknowledge that, with this poison he was very little acquainted, and that, with respect to the nitrate of silver, he had never in his life made any experiments with it.

In the cross-examination leading questions are of the utmost importance; for although they may convey to the witness every sort of information in disguise, and prepare him for giving the desired answers to the questions about to be put to him, yet they are, in many instances, favourable to justice, both by facilitating dispatch and in assisting the memory. In this point of view, leading questions, in a great measure, supply the place of memoranda: they suggest to an honest witness circumstances which he may have forgotten, and they often awaken in his mind a whole train of recollections. They operate, to use the language of a distinguished writer, "as if a crowd of sleeping ideas had been awakened." This is of the first importance, for no man can be in a more

pitiable condition or be laid so open to *suspicion*, as he whose testimony, in open court, requires to be corrected or explained. But, at the same time, I must inform you, that if the witness have no knowledge or recollection of the facts, except he peruse them in a book or a paper, the original book or paper must be produced, or he cannot give evidence of the facts. Registers of hospitals are received as evidence, for the same reason that all original documents are received.

In cross-examinations, as the witness is allowed to refresh his memory by memoranda, so also the counsel has a right to look at those memoranda during the cross-examination. You ought also to know, that a witness is not permitted to assist his memory by memoranda made by another person, which he did not inspect at the time they were making, or, at least, very soon afterwards: they must be original, not copies. The necessity of memoranda in post-mortem examinations, is too obvious to require any comment; and when two individuals are taking such minutes, the statements should be compared, so as to avoid what may appear to weaken the evidence, should the statements not be, in the minutest details, the same.

In the leading questions in cross-examination no counsel has a right to put into the witness's mouth the very words which he wishes him to echo back again. This is always to be guarded against.

Circumstantial, or, as it is frequently termed, *presumptive*, *evidence*, is any testimony which is not direct or positive:—"An inference or a conclusion from circumstantial or presumptive evidence may be either the pure result of previous experience of the ordinary or necessary connection between the known or admitted facts, or of both reason and experience conjointly. And hence such an inference or conclusion differs from a presumption, although the latter term has sometimes, yet not with strict propriety, been used in the same extended sense; for a presumption, in strictness, is an inference as to the existence of one fact, from a knowledge of the existence of some other fact, made solely by virtue of previous experience of the ordinary connection between the known and inferred facts, and independently of any process of reason in the particular instances." The consideration of the nature of circumstantial evidence, and of the principles on which it is founded, merits the most profound attention. It is essential to the well-being, at least, if not to the very existence, of civil society, that it should be understood that the secrecy with which crimes are committed will not ensure impunity to the offender. At the same time it is to be emphatically remarked, that in no case, and upon no principle, can the policy of preventing crimes and protecting society, warrant any inference which is not founded on the most full and certain conviction of the truth or fact, independently of the nature of the offence, and of all extrinsic considerations whatsoever. Circumstantial evidence is allowed to prevail to the conviction of an offender, not because it is necessary and politic that it should be resorted to, but because it is, in its own nature, capable of producing the highest degree of moral certainty in its application. Fortunately for society, crimes, especially those of great enormity and violence, can rarely be committed without affording vestiges by which the offender may be traced and ascertained. The very measures which he adopts for his security not unfrequently turn out to be the most cogent arguments of his guilt. On the other hand it is to be recollected, that this is a species of evidence which requires the utmost degree of caution and vigilance in its application, and, in acting upon it, the just and humane rule impressed by Lord HALE cannot be too often repeated—"Tutius semper est errare in acquietando quam, in puniendo ex-parte misericordiæ quam ex-parte justitiæ."

The nature of presumptive evidence may be illustrated by any case in which the symptoms of poisoning by some particular poison, are strongly marked, yet no positive proof of such a poison having been employed can be obtained; it may be illustrated by the fact, that a child who is said to be *illegitimate* has been born in wedlock, the parents having had access to each other during the period in which a child could be begotten and born in the usual course of nature; or by a case, such as Lord COKE gives, namely,—A man is found dead in a house, having been stabbed with a sword, and another is seen coming out of the house with a bloody sword in his hand, no other person having been in the house. Here the circumstances, and consequently the coincidences, are few, but they are of such a nature as wholly and necessarily to exclude any but one hypothesis.

Such evidence is strengthened, or weakened, or wholly refuted, by collateral incidents or facts. For example, in the case of poisoning, if more than one person has partaken of the suspected dish, and if all who have eaten of it have been seized with the same symptoms, nearly at the same time, then the presumption is greatly strengthened. On the contrary, in the case of alleged legitimacy, if it can be proved that the husband is impotent, or that he labours under some natural infirmity, which prevents access, or that he was absent at the time at which the pregnancy must have commenced, then the presumption is not only weakened, but is at an end, and the child is justly pronounced illegitimate. The importance of correctness

in dates, and of memoranda, is evident in such a case.

Hearsay is, in general, on the justest principles, not regarded as evidence. The person who deposes from his own knowledge, is a *real* and *certain personage*; whilst another, from whom evidence is supposed to be derived, may be wholly a fictitious person, or, if his existence be established, what he is represented to have said may be partly or totally false. A hearsay witness is merely supposed to exist; he is, also, merely supposed to have spoken. It is presumed that he may have said what the other affirms; but if we examine the facts, we may discover that the whole is a fraud, that the extra-judicial statement is made by a person who has motives for his evidence, knowing it to be false, in whole or in part, and, as he cannot be eventually exposed either to cross-examination or to punishment, he is indifferent to the result, if the deception fail in its purpose. In *hearsay evidence*, indeed, both the witnesses, namely, he who speaks before the Judge, and the supposed extra-judicial, original witnesses, are covered with all the various reasons of suspicion which can attach to testimony.

As a general rule, therefore, *hearsay* is properly not admitted as evidence; but the account given by a person in answer to the questions of a medical man respecting health, is admitted as evidence, for it refers to what the person suffers from his bodily feelings. When such an enquiry is material, as, for example, when the evidence is to show what a person has suffered by reason of an assault, it is received; but it is not received if it tend to charge another person as the cause of these sufferings. If, therefore, what a man has said to his surgeon, respecting his personal feelings, be evidence in an action of assault, there can only be one opinion of the necessity of circumspection and accuracy on the part of the medical witness. It is just to reject hearsay evidence on ordinary matters; and the English courts of law do so on the principle, that matters of fact can only be tried "by proof of witnesses upon oath before the judge;" and, further, that the party making the declaration cannot be subjected to cross-examination. But it would be unjust not to receive as evidence what a man has said of himself to his surgeon, in an action for assault. In other cases connected with health, hearsay evidence is also admitted. Thus, in a case, on an action on a policy of life insurance, (Aveson *v.* Lord Kinnaird, recorded in *East's Reports*, vi., p. 188—198), the account which the deceased gave some days after she had obtained the certificate of health respecting her condition on the former day, was admitted as evidence on the part of Lord KINNAIRD, the defendant, and adjudged by the Court of King's Bench to be properly admitted. It is true that the admission of such evidence may lead to abuse in some cases, as, for example, where an assault has been extremely slight; but it is the duty of the surgeon to modify the statement of the complainant by the power of judging of its truth, which his skill affords. The force of this evidence is thus explained by Mr. AMOS, in one of his printed lectures: "This kind of evidence," says he, "of a person's own statements of complaints and symptoms, is admitted on the ground of its being part of what the lawyers call the 'res gesta,' being not evidence of a by-gone fact, but part itself of a fact which it accompanies, and necessary to show the true character of that fact." This distinction is displayed between the evidence in the GARDNER peerage, where women related that they carried their children in pregnancy eleven months, and the evidence in the ANGLESEA peerage, which was a trial which lasted fifteen days, and related "to a suppositious birth, where Dr. JEMMAL, a physician, who had felt Lady ALTHAM's breasts, and found them turgid, and spoke to her having yellow spots coming out upon her, and her making what he called *long spits*, as if she were with child. The Doctor was allowed to state, that he asked Lady ALTHAM if she was with child, and that he made various particular enquiries respecting her then state of health, and also to give in evidence Lady ALTHAM's answers. The physician's evidence in this case was supported by that of an Irish maid-servant, who deposed that Lady ALTHAM, who was of small stature, 'had a little big belly.'"

In the foregoing case, quoted from Mr. AMOS' lectures, you will perceive that professional confidence is overlooked in eliciting evidence from a medical witness; and this is justly regarded as an evil attending the law of evidence, so far as relates to our profession, however advantageous it may be to the public. You will find, also, that the information respecting transactions under legal investigation, which you may have acquired by attending in your professional character, is not held sacred, although the transactions between attornies and their clients are not demanded in evidence. This is an apparent injustice, and it is thus spoken of by a writer on the law of evidence, Mr. Sergeant PEAKE:—"This rule of professional secrecy extends only to the case of facts stated to a *legal practitioner*, for the purpose of enabling him to conduct a cause; and, therefore, a confession to a clergyman, or a priest, for the purpose of easing the culprit's conscience, the statement of a man to his private friend, or of a patient to his physician, are not within the protection of the law. We should certainly think, that the friend or the physician who voluntarily violated the confidence reposed in him, acted dishonourably; but he cannot

withhold the fact, if called upon in a court of justice." There is no appeal; the medical witness is compelled to give the evidence, however distressing to his feelings. You will find how far this may be carried, with regard to medical evidence, in the celebrated trial of the Duchess of KINGSTON for bigamy, in 1776, in the opinion delivered by Lord MANSFIELD:—

"Mr. CÆSAR HAWKINS *sworn.*

"*Examined by* Mr. DUNNING.

"Mr. HAWKINS, are you acquainted with the lady at the bar? and how long have you been so?—A great many years: I believe above thirty.

"Are you acquainted with the present Lord BRISTOL? and how long have you been so?—I have had the honour of knowing the Earl of BRISTOL nearly as many years.

"Do you know of any intercourse between my Lord BRISTOL and the lady at the bar?—Of an intercourse certainly; of acquaintance undoubtedly.

"Do you know from the parties of any marriage between them?—Mr. HAWKINS. I do not know how far any thing that has come before me in a confidential trust in my profession should be disclosed, consistent with my professional honour. [Question and answer repeated.]

"Mr. DUNNING. I trust your Lordships will see nothing in my question, that can betray confidential trust, or dishonour Mr. HAWKINS in giving it. My question is simply, whether Mr. HAWKINS knows, from the parties, of any marriage between them?

"LORD HIGH STEWARD. The question that was asked by the counsel at the bar, is, 'Whether the witness knew, from any information of either of the two parties, that they were married?' The witness objects to it, whether he is to answer any questions that are inconsistent with his professional honour. Your Lordships are to determine, whether the question put by the counsel at the bar shall be asked?

"Lord MANSFIELD. I suppose Mr. HAWKINS means to demur to the question upon the ground, that it came to his knowledge some way from his being employed as a surgeon for one or both of the parties: and I take for granted, if Mr. HAWKINS understands that it is your Lordships' opinion, that he has no privilege on that account to excuse himself from giving the answer, that then, under the authority of your Lordships' judgment, he will submit to answer it: therefore, to save your Lordships the trouble of an adjournment, if no Lord differs in opinion, but thinks that a surgeon has no privilege to avoid giving evidence in a court of justice, but is bound by the law of the land to do it; [if any of your Lordships think he has such a privilege, it will be a matter to be debated elsewhere, but] if all your Lordships acquiesce, Mr. HAWKINS will understand, that it is your judgment and opinion, that a surgeon has no privilege, where it is a material question, in a civil or criminal cause, to know whether parties were married, or whether a child was born, to say that his introduction to the parties was in the course of his profession, and in that way he came to the knowledge of it. I take it for granted, that if Mr. HAWKINS understands that, it is a satisfaction to him, and a clear justification to all the world. If a surgeon was voluntarily to reveal these secrets, to be sure he would be guilty of a breach of honour, and of great indiscretion; but, to give that information in a court of justice, which by the law of the land he is bound to do, will never be imputed to him as any indiscretion whatever."

The Duchess was convicted of the charge, she having married the Duke of KINGSTON when she was the wife of the Earl of BRISTOL.

LECTURES
ON
MATERIA MEDICA AND THERAPEUTICS,
NOW IN COURSE OF DELIVERY
AT THE
WINDMILL-STREET SCHOOL OF MEDICINE.
BY
GEORGE G. SIGMOND, M.D.

LECTURE I.

Ancient Schools of Medicine.—Early Study of Materia Medica.—The Classical Learning of Medical Men.—Careers of Sydenham and Mead.—The Pursuits of Pharmacologists.—The Construction of Pharmacopœias.—Forms of Medicines.—Inordinate and Infinitesimal Doses.—Ignorance of some Preparers and Vendors of Medicines.—Adulterations of Drugs.—Dietetics.—Pleasures of Studying the Materia Medica.

GENTLEMEN:—The great and judicious physician, SYDENHAM, has justly said, "The art of medicine, if it be a real art, and not barely a name, is the best of all worldly gifts, and so much more preferable to all others, as life surpasses all the enjoyments it brings with it." The investigation of the causes, the progress, and the termination of disease,—the inquiry into the powers which nature has placed in the hands of man to remedy the deviations from health, form the most interesting occupations of an intellectual being, and are objects worthy of the highest degree of mental cultivation.

This feeling has been expressed in all ages, and schools for the education of those destined for these high and noble inquiries

have been at all periods crowded by young and ardent students. In these schools, all branches of philosophy, from its first dawn, have been conveyed by lecture; and the superiority of oral tradition, in producing upon the mind a lasting impression, has been universally admitted. It was in the Lyceum that the voices of ARISTOTLE and of THEOPHRASTUS were heard, discoursing on nature and all her works. It was in the Academia that PLATO breathed forth "his stream of living eloquence," and taught the inspired doctrine of the immortality of the soul; and it was in the Gymnasium that the youth of Crotona thronged around PYTHAGORAS, whilst he inculcated the delight of learning and of truth. Here all the sciences were taught. The contemplation of nature and the knowledge of disease went hand in hand, until, as CELSUS tells, a man as remarkable for his skill as for his eloquence, "vir et arte et facundiâ insignis," first separated medicine from her kindred sciences. This was HIPPOCRATES—him whom all civilized nations have consented to call divine. In the school of Cos did he pronounce those splendid *dicta* called the Prognoses Coaci, which have been admired in all ages as the results of acute sagacity, mature reflection, and sound judgment. The first specimen of what appears to have been an introductory lecture, is to be found among the works of GALEN. The destroying hand of time has fortunately left it untouched, and it has been translated into Latin by LUDOVICUS BELISARIUS. It is called "Suasoria ad Artes Oratio." In this he points out, in a most beautiful strain of eloquence, the superiority of mental power over all earthly gifts. In its conclusion, he says, There are two branches of the arts from which the choice of youth must be made,—the first noble, because dependent on the exertion of the mind, and which are universally recognised as the liberal arts,—the other ignoble, because they only demand the labour of the body, and these are the mechanical arts, which in old age must fail. In the first class, he enumerates medicine, rhetoric, music, geometry, arithmetic, astronomy, grammar, jurisprudence, to which he also says may be added, sculpture and painting. He counsels, first, the study of medicine, which, in his opinion, far surpasses them all. The example of lectures thus delivered in the schools of Cos, of Epidaus, of Rhodes, and of Alexandria, has been followed through a succession of ages, even to the present hour; and the names of HALLER, of BOERHAAVE, of MORGAGNI, of HUNTER, of FORDYCE, and of CULLEN, have given to the different schools in which they taught, a reputation not unworthy of those which preceded them.

The particular department to which the appellation of the "Materia Medica" has been given, was studied at the earliest period, and though not immediately separated from the kindred branches of science, became, under the tuition of ARISTOTLE and of THEOPHRASTUS, a favourite object of studious enquiry, and was pursued with an ardour that has never yet been surpassed. No less than 2000 pupils attended the lectures of the first of medical botanists, THEOPHRASTUS. He was a native of Ereso, in the island of Lesbos, and went to Athens, where he became the favourite pupil of ARISTOTLE, who, when he heard of the death of SOCRATES, entrusted his writings and also his school to THEOPHRASTUS. His name appears to have been originally TYRTAMUS, but, from his eloquence, he was soon called EUPHRASTES, or the Beautiful Speaker; and as he advanced in powers of mind, and in the art of imparting his knowledge, he was at last, by unanimous consent, called THEOPHRASTUS, or the Divine Speaker. On his works, with the rest of the ancient botanists, I may hereafter dwell.

It is not, however, my intention to give you, at the present period, a history of the branch of science I am about to illustrate. It is here sufficient to remark, that it must have had an accidental origin; and although the oft-repeated tales of the introduction of various remedies have been interwoven into a detail which has been called a history, yet there is no chain of evidence by which they can be proved. Experience taught man that some plants were noxious to him, whilst others afforded a gratifying subsistence. Facts were discovered by accident, and repeated by industry; new wants were created, and ingenuity was exerted to supply them; but it is only within a few years that the gradually-recorded knowledge of man has been so accumulated as to allow a system to be formed, and that a well-regulated and properly-defined branch of science has existed.

It is usual on these occasions to dwell upon the different branches of physical and moral research which are necessary to be pursued on the commencement of the study of a science; but I take it for granted that your scholastic education has placed you on a level with those who enter upon any of the liberal professions, and that your own ardent thirst for knowledge has prepared you to receive the doctrines that are about to be taught you; but there are certain points immediately connected with this branch of study on which I shall make a few observations.

With regard to the Latin language, it is not only necessary for you, as studying the Materia Medica, to be masters of the classic volumes which exist in that language, but you must also be enabled to translate the less elegant Latin that succeeded to the times of AUGUSTUS. For although the writings of CELSUS, of MEAD, of Sir GEORGE BAKER, of GREGORY, and other physicians, would not have disgraced the pens of CICERO or QUIN-

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afterwards made, and some omissions and alterations.

The pharmacopœias which appeared from this period up to 1809 were improvements upon the former ones. Many useless *formulæ* were omitted, and additional ones of greater value supplied their place. The edition that then appeared had greater pretensions to chemical science than any that had preceded it; and the nomenclature which the French chemists had adopted, for the first time became official in this country. From that time to the present period, the pharmacopœias have been amended copies of that edition. It has been the very proper boast of the Royal College of Physicians of London, that the pharmacopœias and dispensatories have very cautiously kept pace with the scientific progress of the age; and, as Dr. PARIS justly observes, "From the very nature and objects of a pharmacopœia, it cannot be supposed to proceed, *pari passu*, with the march of chemical science; indeed, it would be dangerous that it should, for a chemical theory must receive the seal and stamp of experience before it can become current." With this opinion I most cordially concur; and I shall much regret if, in the pharmacopœia which I understand is now about to appear, alterations should again take place in the chemical nomenclature, in compliance with an outcry that has been raised against an adherence to the old system. Deeply as we are indebted to chemistry for her magnificent discoveries, she has not yet placed her foundation upon a fixed and solid basis; her illustrious votaries have not yet attained to a thorough knowledge of the alternate elements of bodies; and the new discoveries which galvanism and electricity are making, shows us that we are vibrating on the eve of most extraordinary discoveries, which may enable us to understand some of the as yet hidden secrets of nature. Chemistry is the handmaid of medicine, not her guide.

Our science teaches us the form in which medicines may be administered, so as to produce their best possible effect. We must not only consider the nature of the disease, but the stage to which it has advanced, the particular symptom that demands to be immediately alleviated, the condition of the individual, the age, the sex, the habits of life; for all these circumstances not only must influence our consideration as to the drugs we employ, but also as to the adaptation of them to the stomach of the invalid, for he is not always able to receive them in the same shape. A pill will sometimes form a deficiency of the solvent power of the secretions of the stomach, and pass into the intestinal canal, without its proper effect; still it is a form of exhibition of great importance; for many medicines are most offensive and nauseous to the smell, and to the taste, and, therefore, must be concealed from the palate. You must also learn, that some ingredients will not form pills, such as deliquescent salts; others, again, have specific gravities so great that they cannot be suspended in aqueous vehicles, and can only be given in a solid form. The administration of remedies in powder is the most simple, but oftentimes there are reasons which prevent it. The reducing some drugs to a fine powder, often causes them to operate much less powerfully. This is the case with rhubarb, with bark, with ipecacuanha. Powders are also likely, when they abound in insoluble matter, to accumulate in the intestines, and to produce considerable mischief. This is the case with magnesia, and with bark. Some individuals can only take medicine in the liquid form; and where very powerful drugs are to be given, the draught becomes the best. We can then increase, with great precision, our doses. We must likewise learn how best to disguise the nauseous taste of medicines, or to prevent the griping to which many of them give rise. Thus, milk will conceal much of the taste of bark, of the tincture of valerian, of gentian; the tartrate of potash will prevent the inconvenience produced by senna; four or five drops of tincture of opium will assist the action of castor-oil, and likewise prevent the pinching in the intestinal canal. All these points become of essential importance; and to cook up a nauseating drug is often as requisite for the health and safety of a sick person, as the exact knowledge of the nature of the disease.

Probably at no period did the science of which I am to speak demand greater attention, and call for more complete elucidation. Two systems at this moment divide the public attention, and though good results may, under some circumstances, attend them, they are both carried to an extreme which threatens the utmost danger to society. In the first of these, medicines are given in large doses, and some of them the most active substances that the chemist has yet produced. They are fearlessly and daringly tried in every disease and in every stage. Doubtless, in the hands of the steady, the cautious, and the discerning practical man, they may produce all the good effect that can be desired. But how often must they be administered by those who only judge from reading,—who, because they find a case that has yielded to a particular remedy, fancying all cases somewhat similar, "try it," (for that is the dangerous expression of the day), whenever opportunity presents? We must remember, that to alleviate a symptom is not to cure a disease, and that we often lay the foundation of disease by the very means that are employed to cure it.

This injudicious and bold system of practice is inconsistent with the sacredness of human life, and, I am persuaded, is infinitely more dangerous than the other system, bad

as it is, of giving *infinitesimal* small doses. The system of homœopathy is very properly abandoned in Germany. It has received its *coup de grace* in France, for the commission appointed by the French Academy, at whose head was ANDRAL, have, with great prudence and caution, enquired into it, and shown its fallacy. In this country, a chosen few have followed this system, with some benefit to themselves; I doubt whether it has been equally serviceable to the public. If, however, it restrain the love of giving inordinate doses of the most virulent poisons, I shall think it not altogether unworthy our notice.

Besides those to whom is committed the immediate care of the sick, there are others to whom the Materia Medica and its assisting sciences are of great importance. The druggist, and those employed in collecting, preparing, and preserving all medical substances, should obtain some information on the various points which are illustrated in these lectures. How often do the gatherers of herbs commit mischievous accidents from their ignorance? How often is the druggist imposed upon in the article he purchases, from not thoroughly knowing its external characteristics, and the circumstances under which it is obtained, either at home or abroad? It is only too often from practical experience that the gatherers of elaterium find its powers, from the severe diarrhœa which is produced, and from the violent inflammation of the hands and arms. Not long since, six or seven persons employed by the Apothecaries' Company suffered most severely, particularly those who had abrasions of the skin. The collectors of rue are subject also, if they be incautious, to very severe and painful affections of the skin, attended with irritable blisters, which cause excessive pain, sometimes accompanied by fever. Those who, whilst operating in the laboratory, expose themselves to aromas from vegetables, suffer from affections of the head; the effluvium from hemlock, from opium, has caused a determination of blood to the head, and apoplexy. Asthma has been produced by exposure to the aroma from ipecacuanha during pulverization; and the celebrated SCHEELE was found dead in his laboratory whilst experimenting with prussic acid.

In illustration of these effects, I will mention a fact which is now universally acknowledged, that hyoscyamus, or henbane, has, from its odour alone, when its action is increased by heat during the process of drying, the power of producing, upon those who inhale it, a disposition to quarrelling and to fighting. Under the article "Jusquiame," you will find, in the "Dictionnaire de Médecine," three examples worthy of your attention. The most remarkable one is that of a couple of well-behaved married people, who had always lived upon the most affectionate terms, and with good conjugal feelings one for the other, almost a pattern of connubial happiness; but it was observed, that when this amiable couple had spent some time in a particular room in the house, they became engaged in a most violent and desperate quarrel, as every where else they were fond and well-behaved. The room was considered enchanted; but, after some time, the mystery was dissolved by the discovery that these terrible disputes were owing to a quantity of hyoscyamus placed near a stove, and as soon as it was removed perfect harmony was restored.

The properties of drugs are necessary to be known to the manipulator in the druggist's shops. The individual who powders rhubarb and hellebore may be purged as effectually by the aroma as if he had swallowed a quantity of it. Instances have occured where an incautious novice has, when in the dispensary at night, held the candle to a bottle containing some ethereal preparation, and, finding flames issuing from its aperture, has dropped the bottle, and endangered the premises. Some youths only learn the properties of syrup of buckthorn by their love of sweets, but among the most important objects for our consideration is the obtaining the purest medicines, and the knowledge of them, so as to prevent the numerous impositions to which we are exposed, and by which our means of cure lose their character, or the want of proper effect is ascribed to idiosyncracy.

The medical man is dependent upon the wholesale druggist, or the importer of foreign medicines; upon the herbalist, or the grower of plants which can be cultivated in this country; and upon the manufacturer, or the operating chemist. All these persons follow a certain path, which depends upon practical experience rather than upon science. The importer of drugs generally knows very little of that which has been consigned to him from a foreign port; his agents have purchased without being sometimes at all aware of the value of the article that has been collected by the natives, who are, for the most part, astonished to find that they can obtain comfortable wearing apparel for the barks of their trees, for the exudations that issue from those trees, or for their roots; they collect large quantities, and when they are deficient in the object of search, they substitute any thing that appears to bear a resemblance to it, or they have recourse to any stratagem by which they can deceive their customer; they will put large stones and rubbish into the kegs or tubs of aloes, at Soccotora; or at the Cape they will melt their coarse and resinous aloes with the finer sort, and send it in skins; at Alexandria they will mingle together all sorts of leaves for the pure senna; at Smyrna they will mix up the dung of the cow with opium; and there is scarcely an article which is sent in a pure state to this country. They

are all sold at the public sales, samples having been shown at the docks, and the retail druggist who purchases has to incur vast risks in the real value of the article. It is, however, greatly to the character of the British merchant, that he is now sending out, as often as he can, men of botanic knowledge, and possessing some of the requisite scientific information, to secure to us good and genuine articles. The herbalists, or growers of plants, are some of them persons of considerable information and active habits. At Mitcham, in Surrey, under the admirable management of Mr. MOORE, a large proportion of the wild cucumber, of poppies, of camomiles, of liquorice, and other most important herbs, are grown for the supply of the home market. At Ampthill, Messrs. COLEBY and PHILLIPS have an establishment, carefully and thrivingly advancing to maturity; besides which, in the north of England, and in other parts of the country, the cultivation of medicinal plants is proceeding with an activity highly honourable to the character of the nation. To the establishments in the neighbourhood of London I hope to get you occasional access, to give you an opportunity of personally inspecting them. The manufacturer, or operating chemist, is to be found in the neighbourhood of London, of Bristol, and of the larger towns, conducting operations upon an immense scale, by which the preparations of the pharmacopœia are obtained. Pyroligneous acid, sulphuric acid, muriate of ammonia, and a vast number of substances which have a powerful effect upon the human economy, are obtained by processes which require to be examined into before they can be fully comprehended; they fully demonstrate the light that has been thrown upon our intellect by the mighty power of chemistry. Of course, no trade or occupation in this great world is free from being carried on dishonestly, there are always individuals who are tempted by large profits, others who are careless in their pecuniary transactions, others, again, credulous of every tale that is told them; and, consequently, the most important object to human life and existence becomes a source of misery. Adulterations of the most valuable medicines occur at home, unwholesome trash is mixed with a better class of articles, old materials are doctored into apparently new forms, and the consequence often is, that goods are sold at an infinitely lower price than they can be made up at. Thus, sometimes, the confectio aromatica is sold for less, by a great deal, than the ingredients of which it is formed can cost. Sarsaparilla is in price less here than at the spot from which it comes. Scammony, of the greatest impurity, is bought at a low price in the market. The retail druggist and the general practitioner, who are unacquainted with the secrets of the trade, are imposed upon, and, from the want of a knowledge of the Materia Medica, they give to their customers an inferior article, which possesses no medicinal virtues.

There are, again, particular seasons at which there is a failure of some useful drug, such as is now found with the ergot of rye, or a bad season has ruined a crop, either at home or abroad; or, again, there is an artificial value placed upon an article, such as occurred with cajeput oil, and various other remedies, during the existence of the cholera, all of which lead to adulteration, which it is absolutely necessary, in the present state of our profession, that the student should be acquainted with.

There is another branch of our subject which will demand your attention, and which has been called the Materia Alimentaria, or Dietetics; it comprehends a history of those substances which are necessary for the support of life, which repair the waste of the body, and furnish materials for the different secretions; and when we remember that a portion of all that we eat, or drink, is to become an integrant part of our own frame, we cannot deny that the subject, whether in reference to health or disease, demands some share of our study. To this department may be referred an enquiry into *climate*, as promoting health, into *dress*, into *temperature*, into *gymnastic exercises*. It is a part of general education, as it tends to the preservation of man, by the observance of those familiar household duties which are constantly required to render our habitations clean, warm, and properly regulated, with due admission of light and air.

These, then, Gentlemen, are the objects of our particular pursuit; they are, unlike many of the departments of medical science, sources rather of amusement and recreation, than of serious and deep study; there is nothing to disgust the most delicate sensibility; no such scenes as the dissecting-room, or the operating theatre, discloses; it is true I cannot place before you the captivating experiments of the chemist, but I can detail to you cases, I can unfold to you some of the most beautiful operations which nature follows, and I shall do it in the simplest language, for I believe real science does not require to be fettered by harsh terms, nor to be rendered obscure by borrowing her definitions from the obsolete language.

Whilst I shall hope to avoid being superficial, I shall not burthen your memories with those minutiæ to which you can refer in books, and which can be of no practical service to you. I shall try to impress upon your minds the most useful axioms of the former and of the present day; I shall rather seek to tell you the fundamental truths which have been acknowledged, than to excite your imaginations by the theories and the wonderful tales that in the present day find credit with the world. I shall refer you,

as we proceed, to the best works upon the points which I am illustrating to you; the system of MURRAY is the one I shall follow, as the clearest, most intelligible, and least disfigured by an affectation of science. The reading that is required is, of course, extensive; it is not from any one work, or from any one system that your knowledge is to be obtained. You will remember that when the great man whose name I have quoted to you, SYDENHAM, was asked by SIR RICHARD BLACKMORE what book he should read to qualify himself for a physician, his answer was, "Don Quixote." It was because he knew that hard and laborious study could alone render a man fit for the noblest occupation of life, for that science which, whether we regard its antiquity, coeval with the first dawn of knowledge, or the vast acquirements necessary for its cultivation, or if we enumerate the long list of great men who have adorned it, we shall congratulate ourselves that we also are its humble votaries. How happy is your lot, how glorious is your inheritance! Show yourselves worthy of those who have preceded you; not those who have been dealers in draughts, but those whose names are handed down to the admiration and veneration of men. You live in an age when the human intellect is, indeed, at work upon great and glorious objects. We have seen, for three centuries, the most enlightened men of their age employed in idly discussing the merit of some favoured writer of antiquity, vainly quarrelling about the interpretation of a Greek phrase, or the idiomatic expression of some peculiar province.

Folios have been written upon subjects now so little thought of, that the mighty volumes, replete with every knowledge save that of nature and of man, slumber upon the shelves of collectors, to whom they are endeared only by their antiquity. It remained for the age in which we live to inquire into the laws of nature and of life, to scrutinize the firmament, with its beauteous orbs of light, the earth variegated with plants innumerable, the circumambient air "pregnant with its thousand dewy odours." It was reserved for this period for man to draw down the electric fire from heaven, to float above the clouds, with steam to navigate the mighty ocean, or to be impelled, with unheard-of velocity, upon roads of iron; to illuminate our cities by gas issuing from coal; to extract from the vegetable kingdom means by which instantaneous death may be produced, or by which health may be restored, and at every step to explore those hidden means by which existence is carried on. Commerce is now directing to our shores the produce of every soil, and man is employing his ingenuity and his industry to extract from every object means by which he can improve his moral and his intellectual state. It is your duty, as it must be your pleasure, to take your share of the great labour, and to obtain for yourselves and your profession, the reward which honest exertions merit, so that the great end and aim of our sublunary existence be fulfilled, and that our career be beneficial to ourselves, honourable to man, and not unworthy the protection of Heaven.

LECTURES

ON THE

PHYSIOLOGY OF THE NERVOUS SYSTEM,

DELIVERED IN 1836, IN THE COLLEGE OF FRANCE.

By M. MAGENDIE.

LECTURE II.

Physical Functions of the Body.—The Lecturer's Views of Vitality.—Subject of the present Course.

GENTLEMEN:—Having recalled to your minds what I said in my last lecture, let us now pass to another order of vital phenomena.

The system of animal mechanics is every where subordinate to the great system, or the laws, of general mechanics. How, in fact, can we imagine, that means of locomotion could be any other than mechanical powers? We are not aërial spirits, and the movement of a material body, which passes from one place to another, can evidently be nothing else than a simple mechanical phenomenon. Look at the skeleton, a mass of solid bodies, how it is formed to resist the pressure of atmospheric air; were it composed of soft, compressible parts, it would evidently lose its form, and be destroyed under the immense pressure to which it is subject. Our bodies could never resist, in the state we find them constituted, unless they were furnished with solid points of resistance, and other mechanical contrivances, for supporting pressure. In the normal state you will find every thing arranged in the best manner for keeping up the equilibrium of the body, and sustaining it in the erect posture which distinguishes man from inferior animals. It is impossible to reflect on the phenomena of station and progression, and on the mechanical contrivances by which they are facilitated, without perceiving the admirable arrangement of parts, the happy adaptation of means to an end, which prevails throughout the whole animal economy. This is evident; yet but little attention is paid to animal mechanics, while hypotheses are received with more or less credulity in every school; and we still find men of learning, physiologists, who refuse to perceive any connection between their science and the physical sciences, or who obstinately re-

ject every explanation that may be derived from the latter. I have been accused myself of falling into the contrary error, and attributing all the phenomena of life to the action of inert matter, but those who represent me in this light disfigure my doctrines. I have never taught or sustained, that no phenomena of a purely vital or physiological nature exist; were I to say so, I should shut my eyes to the truth, for even the physical sciences themselves furnish us with a proof to the contrary, which is this:—In every machine we require some primitive physical power, or force, as it is called, to put it in movement; this force was formerly represented by water, sometimes by heat, at other times by atmospheric air; at the present day, vapour is almost universally used. This latter is certainly a most powerful agent, and will for ever immortalise the authors of its discovery, whether we regard it as a fact added to the domain of science, or as a social utility. Now, in the animal economy this force is represented neither by vapour, nor by water, nor by any other means for which we can find an analogy in the external world; it consists in a physiological phenomenon, which as yet has escaped all our attempts at explanation; in a word, it is a purely vital act of muscular contraction.

Up to the present day, as I have just said, natural philosophy has been unable to give any explanation of this act. We perceive the effect of muscular contraction, but we are totally ignorant of the nature of the agent which produces it. It is, however, positive that we must seek the impulse which sets our various tissues in motion in the nervous system. Already Mr. Becquerel has begun to apply his beautiful researches in electricity to the animal economy, and we seem to have entered on the path which, sooner or later, will lead to a discovery of this now mysterious agent. But, on the other hand, if we except this single phenomenon, not only are all the rest physical, but they present models of excellence which the natural philosopher will in vain seek elsewhere than in the animal economy. Take, for example, the organs of voice; you will find in that apparatus all the characters which distinguish a perfect musical instrument. It is in the arrangement of the parts composing the larynx, that you will see most beautifully exemplified the application of the physical phenomena that occur in inanimate bodies. In addition to this, you find a living reed, which communicates an immense variety of *timbre* to the instrument, and, being formed of muscular and elastic parts, is capable of effecting a multitude of degrees in thickness, form, elasticity, &c., and thus communicating an infinite variety to the sounds which it produces. Compare with this a common musical instrument, and you will find the same mechanical contrivance, but how inferior! You have, it is true, a reed capable of a certain degree of elasticity,—you have a contrivance somewhat resembling that in the larynx,—but your reed is composed of wood or copper; its elasticity, its vibrating power, are determinate, and hence, unlike a body which is moved at will by a variety of muscles, it can only produce a limited number of sounds. The voice, then, is a phenomenon purely and simply physical. It belongs to the natural sciences in the strictest sense of the word. To prove this, you have only to remove the trachea and larynx of an animal, fit the pipe of a bellows to the tracheal end, and push a current of air towards the larynx; continue to blow until the arytenoid cartilages touch each other by their internal surfaces, and from time to time you will produce a sound analogous to the voice of the animal, though not exactly similar. Natural phenomena of this kind are much less known than those of which we have just spoken, and for this reason, that they have been almost entirely neglected by natural philosophers. What, now, are we to think of those who deny the utility of physical, or even anatomical knowledge in the practice of medicine? Gentlemen, it is truly a source of pain to see our youth brought up with such erroneous ideas, under the influence of theories and prejudices which have penetrated to and taken root even in the chairs of our professors. The consequences of this must evidently be of a most injurious nature, and it is principally upon this account that I insist on them at such length.

In the appreciation of the physical phenomena which are connected with the transmission of sound, or with the refraction of light, these errors might act in an unfavourable manner on the advancement of scientific truth; but they escape the reproach of bringing after them consequences dangerous to life, as all false opinions in the practice of medicine are calculated to do. Another phenomenon, of the highest interest, demonstrates the harmony which exists between the laws governing the universe and those to which the animal economy is subject; I mean, in the production of heat, in what happens during the development of an action which has been called respiration, or calorification, and in which we find the physical condition of the atmosphere that determines combustion. The human body, it is well known, has the power of maintaining itself in a determinate and nearly equable temperature, in the midst of bodies which vary very considerably from it in temperature. Now, let me ask, what are the means by which this is attained? Do they differ in any remarkable manner from the common physical means of producing heat? No. By what means is animal heat generated? By the respiration. In what way does the respiration effect this? By bringing the whole

mass of the blood in contact with the atmospheric air. As soon as that is done, the oxygen of the air, or some other agent, produces certain modifications of the blood, and a consequent change in the temperature of the individual. But the exposure of the blood to the air required a certain artifice, which is worthy your attention. It requires, as you can easily conceive, a great surface to expose the whole mass of the blood, and the surface which the pulmonary tissue presents is, in truth, immense, the whole interior of the organ being composed of a multitude of minute vesicles, which, if laid out, would cover an astonishing space. Now, it is on this surface that the process of calorification, or, if you wish less technical language, of warming the body, takes place. The membrane which composes the parietes of the pulmonary vesicles has the property of being permeable to every kind of vapour; and it is on this principally that the phenomena of respiration depend. This membrane is, as I said, permeable to gases—to oxygen, for example; and if it were to become impermeable, or if it were composed of any impermeable tissue, gum-elastic, &c., the phenomena of respiration would be immediately arrested.

Thus, Gentlemen, you see how the modification of a simple physical fact—how the change of one physical property—may not only modify one of the principal functions of the human body, but be attended with fatal consequences. An example of the latter effect may be actually seen in certain coughs, where the whole mucous lining of the lungs becomes thickened to such a degree as to prevent the passage of atmospheric air, and thus induce death from want of respiration. It is also by means of a physical phenomena that the body of man is enabled to resist the great heat to which he is occasionally exposed. This physical property, Gentlemen, is evaporation, which, as you all know, takes place with great abundance from the whole surface of the body under exposure to elevated temperatures, and which, by cooling down the blood, produces a temperature that is necessary for the support of health and life. We partake of this latter property with all other bodies indiscriminately, whether endowed with life or not. As soon as ever we are placed in circumstances favourable to evaporation, that process commences as it would commence in any other body, whether solid or liquid. The more liquid portion of our various fluids is reduced to the form of vapour, and the quantity thus thrown off depends altogether on the physical conditions which may exist, more or less favourable to evaporation.

There is another phenomenon which has but little occupied the attention of physicians, though it is well worthy attention. This is the non-evaporation of the fluids of the human body. The latter, you know, is composed of liquids and solids, and within the space of twenty-four hours we lose a considerable quantity of the former. Now, suppose this evaporation was to go on constantly, and without any limits, what would happen? Our bodies would evidently become like that of the frog, when torn from his marsh and exposed to the rays of a burning sun; we should become dried up like so many mummies. Hence it required a particular contrivance to oppose this constant tendency to the evaporation of fluids, and this object is supplied by a thin impermeable layer, the epidermis, which is spread over the whole surface of the body. Examine, in fact, this homogeneous layer, which should not be considered in the light of a membrane, as has been hitherto done. See how it adheres, by its internal surface, to the chorion, penetrated by an immense number of small orifices, some of which give passage to the hairs, while the rest serve for the transmission of cutaneous perspiration, or the absorption of substances from the external world. This tissue does not seem to enjoy any of the properties of a living body; it is not subject to putrefaction; its thickness augments or diminishes according as circumstances may require an alteration in its physical properties, and, finally, it is completely insensible. Now, it is through means of this unorganised layer that the human body is guaranteed from the danger of losing all its fluid particles through the medium of evaporation, and its presence is an indispensable condition for the due conservation of our functions. Thus, when a great extent of the epidermic covering has been removed in consequence of a severe burn, scald, &c., evaporation may proceed so rapidly as to produce death by exhaustion of the fluids, independently of the pain and disorganisation resulting from the burn itself.

This point has not escaped the notice of certain physicians, and several cases of abdominal dropsy have been cured by removing a large portion of the epidermis with a blister, or stimulating liniment. The action of the remedy is simple, and easily explained. The cuticle once removed, evaporation commences with increased activity, and finally dissipates the fluid contained in the abdominal cavity. Several experiments have been lately made for the purpose of determining the best method of preserving bodies, and the processes adopted after the most recent trials are exactly the same as those which nature employs during life. It becomes necessary to substitute something for the epidermis, to prevent as completely as possible the evaporation of liquid and gaseous substances which takes place very soon after death; for this purpose the whole surface of the body is covered with a layer of fluid matter, which, by its chemical action, has the property of more or less com-

pletely preventing evaporation. I saw this means employed latterly in one of our amphitheatres by a demonstrator of anatomy who wished to preserve a body for some weeks, and the varnish he used seemed to form an artificial epidermis sufficiently impermeable to prevent evaporation of the fluid parts.

The relation which exists between the phenomena of the physical world, and those which take place in man, is so striking, that examples present themselves to us at every instant. Let us take digestion, and you will see how the principal phenomena of this important function demonstrates the connection which unites physical and vital laws together; follow the whole length of the intestinal canal, investigate the changes which take place in its cavity, and you will find nothing but a chain of natural or physical phenomena; in a word, we are forced to enter into a consideration of these same physical phenomena on every occasion that we occupy ourselves with the functions of life.

I know, Gentlemen, and I have already made to you the remark, that a large number of individuals affect to think that the connection between life and the physical sciences is very slight indeed; in their eyes the influence of natural philosophy upon physiology is obscure, or even inappreciable; in a word, they regard these two sciences as diametrically opposite to each other; the wilful blindness of such persons is not without having an injurious effect on the science of medicine, for if they were to devote that time to experiments which they spend in building up theories, physiology perhaps might benefit from the change. However, we should not be astonished at this prejudice, however strange it may appear *to us;* in former times, people thought that the pure physician required no knowledge of anatomy whatever; it was said, "This patient has a fever; his fever depends on a fit of indigestion; what, then, do we want of anatomy, while we have emetics and purgatives? When we are acquainted with the properties of medicinal substances, and the different maladies to which the human body is subject, why waste our time in investigating its structure?" But even those very individuals who thus reject anatomy in a wholesale manner, yet recognize the necessity of a certain acquaintance with the physical properties of bodies, in enumerating a knowlede of medicines as one of those which a physician, after their guise, should be acquainted with.

In the present and first lecture I have merely laid before you a general view of the manner in which I consider the study of physiology should be conducted. In my last course of lectures (LANCET, vol. i., 1834-5,) I treated of the physical properties of bodies as applied to an explanation of vital phenomena in general. In the course of this year I shall confine myself to the nervous system, although it composes but a small portion of the frame; there is not a moment of our life in which the action of this system does not manifest itself, either directly or indirectly; there is no system whose influence is so generally felt, for no other system is independent of it. Here, however, we must advance in a cautious manner, and with the utmost precision, for the action of the nervous system is as yet little known; we must, above all things, avoid lending ourselves to absurd hypotheses. How much more rational is it to confine ourselves strictly to observation, and when we arrive at an explanation that we find it impossible to give, confess with frankness our ignorance?

SURGICAL CASES BY MR. SYME.

To the Editor of THE LANCET.

SIR:—In the number of the *Edinburgh Medical and Surgical Journal*, published this month, I observe a "Report of Surgical Cases," by Professor Syme of this town, to one of which cases, viz., that of Alexander Syme, at page 257, I beg to draw your attention. He was admitted with a tumour of the groin, simulating an aneurysm, and after the general history of the case is described, the following sentence occurs:—"The patient has no other complaint, except some uneasiness in making water." Now, Sir, the facts are as follow:—The "uneasiness in making water" was, in reality, *every symptom of calculus vesicæ*. If Professor Syme did not think so, why did he sound the man twice, as mentioned in the journals? He did sound him, and said there was *no stone*. The patient died after the operation for the removal of the tumour, and, upon dissection, no less than four moderate-sized calculi were found lying loose in the bladder. Yet, in the "Report," not a word is said about the symptoms of calculus, and the account of the post-mortem examination is such as would lead us to suppose that the bladder had never been examined. Let Professor Syme deny, if he can, or dare, that he suspected the presence of a calculus, that he sounded the man unsuccessfully, and that after death he found four stones in the bladder. Does he presume to call his "Report" a fair statement of cases, when facts like the present are purposely suppressed? In future we shall know what credit to attach to "Reports by Professor Syme." Your obedient servant,

VERITAS.

Edinburgh, Sept. 29th, 1836.

CASE OF

ANEURYSM OF THE ARTERIA INNOMINATA,

AND OF THE ORIGIN OF THE

SUBCLAVIAN ARTERY,

TREATED BY

LIGATURE OF THE COMMON CAROTID ARTERY.

To the Editor of THE LANCET.

SIR:—I send you for publication in your excellent periodical, the particulars of a case of aneurysm of the arteria innominata, and origin of the subclavian artery, treated by ligature of the common carotid artery, in accordance with the principle first advocated by Brasdor, and lately revived by that enlightened and able surgeon, Mr. Wardrop.

The interest felt by the profession in the cases of aneurysm treated by ligature of the vessel on the distal side of the tumour, as first published in your journal, and subsequently in Mr. Wardrop's work on aneurysm, coupled with the fact, that this is perhaps but the second or third case of aneurysm of the innominata in which any attempt at cure by operation has been made, will be the best apology I can offer for the length of this communication, and for what may appear to some to be an unnecessary and tedious detail of the symptoms as they occurred daily after the operation. I have the honour to be, Sir, your obedient servant,

S. W. FEARN.

Derby, Oct. 1, 1836.

CASE.—Aug. 22nd. Mary Scattergood, æt. 28, lives at Burton-on-Trent. She has been married eight years without having had any child, and menstruates regularly. She states that her present illness has existed during five months, and that it commenced with a violent fit of coughing, one night, when she was going to bed. Soon after this she experienced a throbbing swelling above the sternum, which, for four or five weeks, gave her a good deal of pain. She was bled several times by her medical attendants, Mr. Tomlinson and Mr. Lowe, with relief from the pain in the tumour, and, shortly afterwards, was admitted as an in-patient of the *Derby Infirmary*, under the care of Dr. Bent. I examined the case, whilst in hospital, with Dr. Bent and the other medical officers, and at that time made the following observations:—There was a rounded, pulsating tumour, immediately above the sternum, bounded, laterally, by the trachea and the tracheal margin of the sterno-cleido-mostoideus, which was evidently making considerable pressure upon the trachea, near its bifurcation, as evidenced by loud wheezing, frequent cough, and general difficulty of breathing. Loud *bruit de soufflet* was heard in the supra-clavicular space, and a less distinct bruit along the course of the right common carotid. The bruit in the subclavian artery was rendered more loud by stopping the transit of blood through the carotid, and when the circulation through the subclavian was arrested, the bruit in the carotid ceased. The tumour itself emitted sounds similar to, and synchronous with, those of the heart. The heart's sounds were natural, and there was no râle in the lungs. The pulse in the right wrist was very indistinct; that in the left was natural as to strength and frequency.

The prevailing opinion at this examination appeared to be, that the disease was an aneurysm of the arteria innominata, but the surgeon to whose care she was subsequently transferred, and one of his colleagues, considered that it was an aneurysm of the arch of the aörta, and, of course, that any operation for its cure was quite out of the question.

She remained in the Infirmary during several weeks after this time, undergoing medical treatment, and this day (Aug. 22nd) was discharged at her own request.

Her difficulty of breathing and cough had of late increased very much, and the acetate of morphia had failed to procure her rest at night. The dyspnœa was aggravated by the slightest exertion, and the wheezing was rendered much more loud.

After her discharge I offered to take lodgings for her in the town, and to perform what appeared to me to be the requisite operation, to which proposal she very readily assented, as she had a conviction that nothing short of an operation could save her life.

27. The patient came yesterday from Burton, in a carrier's cart, and was placed in her lodgings. She has passed a better night than usual, and I have this morning made a careful examination of her present condition. Her cough is troublesome, and the wheezing very loud; pulse almost imperceptible in the right wrist; in the left it is natural, and gives seventy-two beats in the minute. She is obliged to lie with her head a good deal raised. The tumour is very distinct, and throbbing, above the sternum, in the situation first noted, and also in the space between the sternal and clavicular attachment of the sterno-mastoid muscle. Bruit de soufflet loud in the supra-clavicular region, and still increased by stopping the circulation in the carotid; there is, however, no bruit audible along the course of the carotid. I made pressure for some time upon the carotid, so as to stop the circulation through it, and was pleased to find that her breathing became, in a marked degree, more free and less embarrassed. A similar experiment upon the subclavian did

not affect the state of her breathing at all. The respiratory murmur is natural over the whole chest, as also are the sounds of the heart. Bowels not open to-day. To take ℥iss. of the compound decoction of aloes; to lie in bed, and to have for diet, flour-pudding, tea, and gruel.

29. I have this morning visited the patient, with Dr. Bent and Mr. Wright, and again carefully examined the tumour and the vessels proceeding from it. We found her suffering very much from the difficulty of breathing, and unable to remain for any length of time in the recumbent position. The experiment of stopping the circulation through the carotid and subclavian was repeated, and the result, so far as the carotid was concerned, was quite in accordance with what happened at the last examination. Each time when the carotid was compressed, the breathing became more tranquil, and when the pressure was removed the dyspnœa instantly returned. A similar compression of the subclavian artery increased the difficulty of breathing, but when the subclavian and carotid arteries were compressed at the same time, the relief to the breathing was much the same as if the carotid only had been obstructed.

It was not difficult, from this and the previous examinations, to determine which vessel to select for the application of a ligature. The circumstance of the circulation in the subclavian artery being already considerably obstructed, and its entire obstruction adding to the distressing symptoms, taken with the further circumstance that pressure on the carotid was followed by a relief from the dyspnœa, seemed clearly to indicate, that in any operation for the cure of the disease, a preference must be given to ligature of the carotid. And here I cannot help remarking the analogy in one respect between this case, and the case in which Mr. Wardrop placed a ligature upon the subclavian artery for an aneurysm of the innominata. In his case a preference was given to operating upon the subclavian, from its appearing that the circulation in the carotid had almost ceased, and in my patient I selected the carotid, because (with other reasons) the circulation in the subclavian is considerably arrested.

Operation.—30th. I this day proceeded to the performance of the operation, in the presence of about twenty medical gentlemen, amongst whom were Dr. Bent, Mr. Evans (Belper), Mr. Wright, Mr. Fox, &c. The patient was placed upon a table, and it was found necessary to keep her in nearly an upright position, owing to the difficulty of breathing, and the cough, being so much increased if she attempted to lie down. An incision, about three inches in length, was made, commencing an inch below the angle of the jaw, and extending downwards along the inner border of the sterno-cleido mastoideus. A small artery, which gave no trouble, was divided in this first step of the operation. The cervical fascia was then cut through, and, by a little dissection, the sheath of the vessels, with some twigs of the descendens noni, and the omo-hyoideus, were brought into view. After some trouble, owing to the depth of the vessels, from the head being inclined forwards, I opened the sheath above the omo-hyoideus, but was unable to pass a ligature beneath the vessel. I therefore at once divided the belly of the omo-hyoid, and thus exposed, much more freely, the vessels. An armed aneurysmal needle was then passed beneath the carotid, from within outwards (contrary to the usual directions in such cases), care being taken not to injure the vein, or to include the par vagum, and, after waiting a short time, the ligature was firmly tied.

Scarcely an ounce of blood was lost, but the different steps of the operation were much impeded by the frequent cough and the sense of suffocation, which considerably distended the veins, and by the necessity of keeping the patient almost constantly in an upright position. The artery was large, and its coats appeared to be a good deal thickened. The sheath also appeared to be more than usually adherent to the vessels. But one ligature was employed, and, the wound being dressed, she was put to bed. She complained a good deal of pain in the right ear immediately after the operation.

Progress.—At three o'clock, an hour after the operation, she was breathing tranquilly, and sat up in bed, and smoked some tobacco. Her pulse was 86; by five o'clock it had risen to 96; and at eight o'clock it was 106. Her breathing, from the time of the operation, had, at intervals, been much oppressed, and she had had many violent fits of coughing. The dyspnœa was now (eight P.M.) very distressing, and I accordingly bled her to ten ounces, and administered forty drops of laudanum. Her breathing seemed a little relieved after the bleeding, and in a short time she was able to lie down. The pulse rose to 120.

31. One A.M. The patient is now breathing quietly, and has scarcely coughed at all for the last two hours; pulse 100. The pain in the right ear, of which she complained directly after the operation, has continued, but is now rather better.

Eight A.M. Has passed a comfortable night, having slept at intervals a little. She scarcely coughed at all from eleven o'clock last night until seven this morning. There seems now, however, to be a considerable accumulation of mucus in the trachea, and she has been coughing violently for the last hour. Bowels costive. Let her take an ounce and a half of the compound decoction of aloes immediately.

Noon. The cough continued until eleven o'clock. The left side of the face is now flushed and hot, and looks plump, and slightly livid; the right side has a shrunk appearance, is pale, and cold; the pain in the ear has entirely subsided. To repeat the decoction of aloes, and to have two dozen of leeches applied to the upper part of the chest.

Six P.M. The leeches have bled freely, with evident relief to the breathing. Bowels not open. To have a common purging draught.

Sept. 1st., half-past one A.M. Bowels open twice, freely; she has, however, great difficulty of breathing, and makes a loud wheezing noise. Habeat *haust. c. ether. sulph.* 3 ss., et *tr. opii.* gtt. xxx.

Eight A.M. Soon after the last visit her breathing became better, and she has passed a very good night; she has slept for two or three hours, and expresses herself this morning as a good deal relieved. Bowels open; pulse 120; the pulse in the right wrist about the same as before operation,—if any thing, rather more feeble. She says that she cannot now feel the "beating of the lump," which she could distinctly before the operation, but she feels a stoppage at the lower part of the windpipe. Skin cool, face not flushed. She passed the remainder of the day comfortably, sleeping for two or three hours at a time, and she has been less troubled with the cough and dyspnœa.

2. Eight A.M. Has slept but little; her cough has teased her most in the night, though she says her breathing is more free. Has expectorated a large quantity of frothy mucus, and has been repeatedly so sick as to vomit; pulse 120.

Five P.M. The expectoration has, during the whole day, been very profuse, and attended with violent fits of coughing. There is the most marked mucus rattle in the trachea and the larger bronchial tubes. The bruit de soufflet is heard above and below the clavicle, as before the operation, and the pulse in the right wrist has become much more distinct. The sickness has abated; pulse 135. Appl. *Hirudines* xij. sterno, et sumat postea *haust. c. ether. sulph.* 3ss., et *tr. opii.* gtt. xxxv.

Dressed the wound, which appears to have healed by the first intention.

Half-past eleven P.M. Has taken two doses of the ether and laudanum, and appears now more composed. There is less rattle, and the violence of the cough has a good deal abated.

3. Nine A.M. Has slept, at intervals, for several hours, and says that her breathing this morning is more free. There is still, however, a good deal of mucus rattle, and the pulse is 140, and weak. Her strength seems good. To take beef-tea, and to continue the ether and laudanum at intervals of four hours.

Eleven P.M. Has been much more comfortable during the day, though the frothy accumulation continues. Bowels freely open. Continue the ether and the tincture of opium.

4. Has had a good night, and says her breathing is much better than it was before the operation. Thinks the tumor is less; it feels perhaps a little more solid, but the pulsation in it remains about the same.

5. Has been up during near an hour, whilst her bed was made; feels much better; slept six hours during the night; wound appears to be quite healed, excepting at the ligature; pulse 106.

7. A good night, and this morning she is as well as usual; pulse 100; no fever. Pergat.

9. Continues to improve; has had an excellent night, and says she has never, since the commencement of her illness, felt the beating of the tumour so little as she does now; pulse 96. If the circulation through the subclavian be stopped, the breathing becomes shorter, and more difficult, and if the pressure be continued for some time, the embarrassment to the breathing is very distressing. Even slight exertion adds to the dyspnœa, but the cough and expectoration are now very trifling. The tumour is considerably lessened, and its pulsations are not nearly so distinct.

11. In good spirits, and complains only of the dyspnœa. The pulsations of the tumour cannot now be felt at the space between the sternal and clavicular attachments of the sterno-mastoid, and they are much more feeble above the sternum. Appr. *Empl. lyttæ.* parti superiori sterni, et cont. *Haust. ether.* et *tr. opii.* h. s.

19. Has been going on well since the last report. The dyspnœa was entirely relieved by the blister, and has not since returned, and the cough is nearly gone. Her nights are good; she sits up during seven or eight hours daily, and her breathing is not affected by the exertion of walking about, or going up and down stairs. The tumour still pulsates, but seems to be gradually diminishing in size. Pressure on the subclavian makes her breathing "thick," as she calls it, but does not produce any thing like the distress it would have occasioned a week ago.

27. It is now a month since the operation was performed. The patient walks out daily; her difficulty of breathing is entirely removed, and only returns, slightly, if she walks fast. The tumour still pulsates distinctly, but any pressure upon it does not give rise to dyspnœa, or inconvenience of any kind. She sleeps well at night, and has for the last ten days been entirely without medicine. She has expressed a wish to return to her friends at Burton, and as she appears to be so well, I have permitted her to do so.

The further progress of the case I shall of course be glad hereafter to communicate. I have written to my friend Mr. Tomlinson, of Burton, and requested him to keep an eye upon it, and I shall also myself take an opportunity of seeing it occasionally.

So far even the case is one of no ordinary interest, as it tends strongly, with the cases already published, to determine, at all events, *one* important surgical question, viz., the curableness of what has till lately been consid red incurable,—aneurysm of the arteria innominata; and it also bears upon the general question of the propriety, in every case, of attempting the cure of aneurysm by ligature of the vessel on the distal side of the disease.

MORBID

EXTENSIBILITY OF LIGAMENTS,

WITH REFERENCE TO

LATERAL SPINAL DISTORTION.

THERE is a disease which is frequently met with in hospital practice, which is generally described as a concomitant of rickets. I allude to the giving way of the knee-joint. In this complaint the knees approximate, whilst the shaft of the tibia on each side is thrown obliquely outwards. It appears to arise from a relaxed condition of the ligaments, depending on a debilitated and depraved habit of body. May not the simple pathology of this disease be allowed to throw some light on the more obscure phenomena of lateral spinal distortion? May not the capsular ligaments of the oblique processes of the vertebræ be in like manner morbidly extensible, from a similar cause? Indeed, the lateral curvature of the spine is generally to be found in those labouring under this affection of the knee; nor are we justified in attributing the former solely to a softened state of the bones, or an improper action of the muscles. That the muscles exercise a most important influence in maintaining the strength of the spinal column, we most readily admit; but the extent of their influence in the production of spinal deformity may be much overrated. It appears to me, that the great error which writers on this branch of pathology have fallen into, is that of ascribing the disease to the sole operation of one favourite cause, where many may be concerned. A weakened and vitiated state of the body is attended with general debility throughout the whole system; the muscles, ligaments, and bones severally lose their proper tonicity. Now, each of these structures may be concerned in spinal distortion. If we reflect on the action of the muscles of the spine, we shall find that many of them have a direct tendency to brace the vertebræ in contact, and retain them in apposition. Such would be the operation of the multifidus spinæ, inter spinalis, inter transversalis, &c. &c. When these muscles lose their proper tone, an undue stress must consequently be laid upon the connecting ligaments. "When the deltoid muscle has been paralytic, the mere weight of the arm has been known to cause such a lengthening of the capsular ligament of the shoulder-joint, that the head of the os brachii descended two or three inches from the glenoid cavity."* In the same manner an elongation may be produced in the capsular ligaments of the vertebræ, from muscular debility, which would consequently admit of an unnatural curvature of the spine. The ligaments would more readily admit of this distension, from the laxity of their own structure, originating from the same cause as occasioned the loss of muscular power. That the ligamentous structure may be affected in this manner, is allowed by the first authorities. Sir Astley Cooper relates a case of luxation of the jaw being frequently produced by the mere act of opening and shutting it, from a *laxity* in the capsular ligament; and he ascribes the partial dislocation of the femur from the semilunar cartilages, to the same cause. The ligaments then become elongated, and the spine yields to the superincumbent pressure, but unfortunately the disease does not stop here. The vertebræ now make undue pressure upon each other, and upon the intervertebral substance; hence arises inflammation and its consequences, ulceration of cartilages, absorption of bone, &c. That *caries* is frequently the *effect*, and not always the *cause*, of spinal deformity, I feel fully persuaded, though I would by no means deny that it may often be the primary affection.

JAMES BOWER HARRISON.

Manchester, Oct. 6, 1836.

BIRTH OF TWINS, ONE FŒTUS LONG BLIGHTED.

To the Editor of THE LANCET.

SIR:—The case given in THE LANCET, of the 17th of September last, by Mr. Fox o Broughton, and which produced some ap propriate remarks from the pen of Mr Ingleby of Birmingham, in your journal of the 1st inst., induces me to relate a case strictly bearing upon the subject.

I attended a Mrs. C———, who was delivered of a female infant, at about 9 o'clock P.M., on the 22nd of September, 1833. The stages of her accouchement were rapid. The placenta immediately detached itself, and was removed with perfect facility. In about four hours afterwards, some sharp

* Cooper's Surgical Dict. Art. "Dislocations."

pains were presented, in the course of which a blighted fœtus was thrown off. Upon examination, every part of its surface exhibited a shrivelled appearance. The skin was much thickened, and looked as if it had been submitted to the action of tannin, or as if it had been a preparation kept in spirits, and just removed from its encasement. Now, this lady dated her impregnation from the time that her catamenia discontinued, and during the whole time of gestation no inconvenience had arisen, her feelings in every respect being precisely the same as they were upon former occasions. Perhaps these facts will meet some of the queries propounded by Mr. Ingleby.

Upon a little reflection, I was led to believe that it was a twin case *ab origine*, and at about four months of gestation; that vitality ceased in the one, and was continued in the other, and that the uterus, in conformity with the preservation and advancement of the living one, acquired the power of standing out against the influence of the dead one, which, if alone, would have been expelled soon after its vitality had ceased. I was also led to suppose that the uterus is capable of performing other than the functions which are so familiar to medical practitioners, more particularly when we see that it immediately gets rid of a dead fœtus, when alone *in utero*; but if it have a living associate, it is preserved, for the benefit of the latter, until the time has arrived for a general expulsion. Questions might now arise as to what chemical or other changes the liquor amnii has sustained, to enable it to preserve a dead fœtus without detriment to a living one, or even to any portion of the constitution itself? And, again, what changes did the uterus itself undergo, so as to accommodate itself to such an unusual condition? Such questions I must leave for exploration to men of ardent and enquiring minds, who will, no doubt, at some time or other, elucidate the subject for the benefit of physiological science. I am, Sir, your obedient servant,

JOHN LEESON.

63, Chiswell-street, Finsbury-square,
October 4th, 1836.

SUCCESSIVE BIRTHS OF THREE DEAD FŒTUSES.

To the Editor of THE LANCET.

SIR:—On Saturday, September 17, 1836, I was requested to attend Mrs. Mapham, æt. 33, of delicate constitution, residing at Woodpark-place, Brixton. I saw her at 8 A.M., when she had been in labour since 10 on the previous night. She was at the full period of her third pregnancy; the pains had been strong, at intervals of about 15 minutes during the whole night. During the last hour they have been less frequent and more feeble; she feels exhausted; the countenance is pale and anxious, the skin covered with cold prespiration, pulse 90, feeble; thirst moderate, tongue clean and moist; bowels open; is much depressed in spirits. Thinks the child lies "across the stomach," as the pains have been confined to that part and the sides, and not at all in the back, as in her former labours. Has not felt the motion of the child during the last three days. Had a fright about three weeks since. Has had very restless nights, and unpleasant dreams since that time, and shivering fits several times lately. On examination per vaginam, I found that passage relaxed, and lubricated by a yellowish matter, which emitted an offensive odour. The left labium was considerably swollen, and thickened by a mass of varicose veins; the os uteri was low in the pelvis, and considerably dilated, soft, and yielding. I passed my finger on the inside of its neck, to a considerable distance, but could not reach the presentation. The membranes felt flaccid.

As she seemed exhausted, I gave her 25 drops of the sedative liquor of opium, and promised to see her again in an hour.

Ten A.M. She has had some rest, and feels more comfortable; has had only one or two pains since last visit. Twelve o'clock. Pains are now become brisk, recurring regularly every 10 minutes. She walks about the room during the intervals, but on feeling the pain, she immediately drops on her knees, holding by the side of the bed or a chair. The head can now be felt presenting naturally, the parietal bones overlapping each other, but perfectly moveable, and not compressed by the uterus. I was convinced that the child was dead, and suspected a second to be the cause of the very slow progress of the labour, by causing over-distension of the uterus. I could not, however, succeed in bringing it down for some time, though I could grasp the head easily, and used some traction. The pains continued strong and active until four o'clock, but without producing much effect on the progress of the labour. They now began to slacken, and the patient became impatient, and despondent. I then introduced my left hand, passing it beyond the head, and cautiously and slowly extracted a female fœtus, rather under the ordinary size, which appeared to have been dead some days, the cuticle easily separating from the extremities, which, however, with the trunk presented the natural red colour. The umbilical cord was of the natural thickness, but, on dividing it, the vessels could not be distinguished, and no trace of blood appeared. On passing my hand over the abdomen, I could very distinctly feel a second fœtus. The patient felt now more comfortable, but much disappointed at finding that the child

was dead, as her husband anxiously wished for a daughter, both the former children being sons.

More than an hour having now elapsed without any return of uterine pains, I infused half a drachm of the bruised secale cornutum in a little water, and having sweetened it, gave her half in about a quarter of an hour. Pains came on, and in half an hour were very powerful. On examination, I could distinctly feel the left hand and fore arm through the membranes. During the intermission of pain, I passed my left hand higher up, and felt both feet nearly together, and, without much difficulty succeeded in turning and bringing them down. I now withdrew my hand, and merely assisted the efforts of the uterus, by the most gentle traction, and in half an hour the second child was born also, a female, and *dead*. The abdomen still seemed larger than natural after delivery, and, on examination, I felt a *third*, though indistinctly. I informed the nurse, but did not allow the patient to know of it, as she now congratulated herself in the hope of all being completed, excepting the separation of the placenta. She was not, however, allowed many moments to console herself, for the uterine pains continued, and soon became more powerful than before. The head presented naturally, and in three quarters of an hour from the birth of the second, a *third* female child was expelled, by the unaided efforts of the uterus. This seemed to have been longer dead than the others, being greatly discoloured, especially the head, which was nearly black, and much larger than that of the others, apparently from hydrocephalus, the water having escaped, the integuments being flaccid, and completely separated from the bones, and the bones almost entirely separated from each other; in other respects it resembled the other fœtuses.

The placenta, of immense size, with the three chords attached, near each other, followed in half an hour. The uterus contracted completely; there was not the slightest hæmorrhage, either during or after the delivery, and the patient makes no complaint, but expresses herself as feeling very comfortable. I gave her an anodyne draught, allowing her to remain unmoved for an hour. She was then put to bed, and I left her for the night, under the care of a nurse and her mother, at whose house she has been staying some weeks, expecting this event.

18th. She has had a good night's rest; feels refreshed, and free from pain, excepting an aching of the limbs and some tenderness of the vagina, which has been the seat of swellings and discharges of purulent matter since *July* last, when I was first consulted for these symptoms and their consequences, namely, retention of urine, requiring the use of the catheter, warm anodyne fomentations, and gentle aperients, with rest and attention to diet. These means were perfectly successful in removing all complaints at *that* time, but she had a slight return on one or two occasions, which yielded to the same treatment, followed by astringent lotions. She has had no difficulty in emptying the bladder either during her labour or since.

19th. She has had another good night; has perspired a good deal; pulse natural, and soft; thirst moderate; has some appetite; bowels opened twice, by a table-spoonful of castor oil; lochia natural; has had a few after-pains, followed by the expulsion of a large clot of coagulated dark-coloured blood.

21. Has had no bad symptom since the last report; she feels very comfortable; secretion of milk moderate; it flows freely, without being drawn; takes some nourishment; bowels have not been open since the operation of the castor-oil. Repeat the dose.

From this time she has gone on improving uninterruptedly, and now walks about her room; her appetite is good, the secretions are natural, and she feels in better health and spirits than she has done for some months, and will return home to her family, residing near Finsbury-square, in a week or ten days.

I remain, Sir, your obedient servant,

J. C. Cornelius, M.R.C.S.L.

16, Frederick-place, Goswell-road,
Sept. 30th, 1836.

LATERAL DISLOCATION OF THE KNEE-JOINT.

Henry Culpit, ætat. 30, a farrier, was riding a horse home from his employer's, on the 22d of August, when the animal became restive, and in rearing fell, the man being under. The man was immediately brought to the *London Hospital*, when he was found to have sustained the above-named injury. The external condyle of the femur occupied the inner articulating surface of the tibia, the inner forming a considerable projection on the inner side of the knee; there was slight flexion of the leg, with eversion of the foot. Mr. Palmer and Mr. Samuel, the house pupils for the week, by making extension and counter-extension, easily succeeded in reducing it. The limb was afterwards placed on pillows. It is almost unnecessary to add, that it was followed by immense swelling of the joint, which required the repeated application of leeches, warm fomentations, &c., under the use of which the tumefaction rapidly subsided. No constitutional disturbance occurred.

THE LANCET.

London, Saturday, October 15, 1836.

Of all the frauds which at present disgrace the system of medical education in this country, not one will sustain a moment's comparison with that of the CERTIFICATE EXTORTION, now in force at our medical schools and hospitals, and patronised by our medical colleges.

This fraud stands forth, confessedly, as one of the most impudent, brazen, and infamous abominations that was ever endured by an intelligent community. There is not one redeeming quality in this mode of committing plunder. It is wholly compounded of avarice, impudence, and ignorance. If the cause of medical reform receive an adequate consideration by the members of a prudent legislature, this most disgusting imposition, this insult to the genius of the country, will be wholly annihilated by the first enactment which is passed for the abolition of any medical abuse.

Next to the astonishment which occupies the mind on finding that any set of men who are entrusted by the law with high deliberative and executive functions, have dared to originate such a system as the one which is based upon "tickets," "certificates," "winter and summer courses," and "recognised schools and hospitals," is the amazement which arises from witnessing the patience,—we might say the *slavish* submission—of the great body of members of the medical profession in this country, to this foul enormity.

For the thousandth time we ask this question,—Can orations, however excellent they may be, instruct the youthful mind in the details of anatomy,—in the details or elements of ——? but it is useless to run through the sickening catalogue. Yet the student is compelled, by the atrocious ordinances of our Medical Colleges and Companies, to produce CERTIFICATES which furnish *proof* only that he has been *robbed* both of his *time* and his *money*.

We admit, of course, that a partial knowledge of principles can be communicated in *oral* addresses,—that the feelings of the student may receive a useful impulse, and his mind be enriched and excited by the noblest aspirations, from such profoundly eloquent, illustrative, and poetical discourses as, for example, are often delivered by Dr. GRANT, in the chair of Comparative Anatomy. Nay, we are free to acknowledge that the value, to the youthful enquirer, of addresses of this description, exhibiting, as they ever are, vast powers of reasoning, unequalled depth of research, and the most faithful philosophical deductions and applications, cannot be over-estimated.

But displays of this nature are, like angels visits, "few and far between." When, however, they do occur, their influence extends beyond the effect which they produce upon the minds and feelings of the immediate auditory, when thrown into contrast with the inanimate, crude, and idiotic performances of the great majority of "recognised" lecturers who occupy what are, *ludicrously enough*, termed the "*medical* schools" of this metropolis.

But besides the utility of making so valuable a contrast, remember this astounding fact,—That certificates of attendance upon lectures on Comparative Anatomy,—the subject of Professor GRANT's labours,—are *not* included in the regulations issued by the College of Surgeons and Apothecaries' Hall. The certificate system, therefore, so far as it could operate on cultivating the vast and beautiful department of science which is denominated "Comparative Anatomy," has been framed apparently with the design of keeping it down, and of creating a prejudice against it in the minds of students in medicine. Scandalous is this outrage against public decency, and the behests of all inquirers after the most important concealed works of nature; but the perpetrators of this outrage shall yet receive the

singing rod of punishment, and suffer the full measure of deserved shame.

Amongst other contrivances which have been fabricated for upholding the vile frauds of "recognitions" and "certificates," the whole gang of monopolists subscribed a sum of money, in the autumn of 1827, for the purpose of enabling their tool, RODERICK MACLEOD, after his yellow monthly affair had been cut into shreds by THE LANCET, to undertake the weekly green concern printed under the auspices of Messrs. Longman, with the title of "The London Medical Gazette." The "recognised" monopolists hoped, by engaging two or three worthless hirelings to attack the private characters of all medical reformers, and by attempting to hold up to ridicule the claims of GENERAL PRACTITIONERS to public confidence,—by trumpeting forth the "superior" merits of a handful of hospital physicians and surgeons,—and by representing that medical students were an ignorant set of young men, "novices, green, and very fresh from the country," and who ought to be coerced into submission not only to the "regulations" of the Colleges, but to the gross insults and physical assaults, of which, at that period, they were made the objects, at Guy's Hospital, and elsewhere, by the insolent "recognised" teachers,—by hiring two or three worthless scribblers to labour at these objects, they hoped, we say, that the whole scheme of monopoly and robbery might be continued throughout the present generation. But, in this, to them, inglorious contest, the corruptionists, and the whole bevy of BATS and PURES, suffered a defeat which stands probably without a parallel in the records of jobbing and misgovernment. Within a short period, the chief hireling whom they had employed was beaten into an acknowledgement that a reform of *some* abuses was necessary in our medical institutions. Still, however, no confession was made of the existence of any precise abuse. Never were the instances of misgovernment in our hospitals, colleges, or lecture-rooms, described by name. The insults which were offered to GENERAL PRACTITIONERS in medicine have not been once retracted; nor has a word been written in the Subscription Journal against those robberies to which medical students are still subjected under the certificate-system. On the contrary, the contemptuous treatment is still continued by their persecutors, as we find that the pupils of the present session are described in *The London Medical Gazette* of Saturday, October the 1st, as "NOVICES, *who are very fresh and* GREEN *from the* COUNTRY."

"Greenhorns," they would have said, had they dared. "Medical students are such "greenhorns that they *ought* to be robbed, "and rob them we will with impunity. They "are *novices*, and they shall become the ob-"jects of imposition. They are fresh from "the country, therefore will they become "the easy dupes of our practised system of "plunder."

Actuated by these, or some such designs, the hirelings of the Charity Journal have just been directed to inform the "novices "who are very fresh and green from the "country," that the medical schools attached to the old corrupt hospitals admit of the attendance of students at a *cheaper* rate than it can be procured at the Medical School of the London University. Although the price of the "tickets" which are recognized by the regulations of the College and Hall for the Lectures and Hospital attendance is absolutely *less*, by *many* pounds sterling, than it is at GUY'S, ST. GEORGE'S, ST. BARTHOLOMEW'S, ST. THOMAS'S or the MIDDLESEX HOSPITAL, yet, this is the falsehood which these impertinent hirelings have had the audacity to address to the "novices, green and fresh from the country." The corruptionists are in a frenzy in consequence of the success of the medical department of the University; but their fury has been especially excited by the adoption of the liberal and just system of Concours for the Office of House-Surgeon, and other important situations, in the University Hospital, where, too,

another grievous source of annoyance is presented in the charge of twenty-six pounds five shillings for the right of a *perpetual attendance* on the Medical and Surgical Practice of the Institution. It is even possible that this money affair is, to the monopolists and their hirelings, the most perplexing of the disasters to which they are at this moment, exposed. The concours has undoubtedly a tendency to strip them of their iniquitous advantages in the way of extortion and profit; but here the thing is actually done; the medical and surgical practices of the new hospital are combined, and a charge of only twenty-six pounds five shillings is demanded for a perpetual attendance on both. In this direct attack on the pockets of the corruptionists, the indirect and possible effects of the concours may be forgotten. "Pecuniæ obediunt omnia" in the estimation of hospital intriguers and monopolists. Their love of science may always be ascertained by the weight of coin. Hence, a medical school is either "dear" or "cheap," in the sordid calculations of these money-mongers, according to the amount of pounds sterling actually demanded for the tickets of attendance. The capacity of lecturers, the experience and ability of medical officers, are matters which are not deserving of a passing thought. "What sum shall we ask for our *tickets?*" That is the prime question with the Bats and Pures, and their mercenary hirelings. Hence the school which makes the lowest demand in *money*, is held up to the students, to the "NOVICES, green and fresh from the country," as the cheapest, and, therefore, the best. *All other considerations are cast aside.* The demand in *money* is the one thing of importance. There has just figured in the "Gazette" a table of the fees which are demanded at the London medical schools, wherein, by the insertion of a portion only of the payments which are required by the "regulations" of the College of Surgeons, and the Hall, the hirelings of that journal have endeavoured to impose on the "novices green and fresh from the country," by attempting to make it appear that the Medical School of the University is not the cheapest, —obviously in a *pecuniary* sense,—is not the *cheapest* of our medical schools. In making this false calculation, the payments for attendance at the hospitals are wholly omitted, —a sufficient exposure of the fraud. The hirelings and their employers were sorely repressed by the contrast which was drawn in the Students' Number of THE LANCET between the University Hospital and the old and corrupt establishments, and they protested that it was our object (although we disclaimed it,) to institute a comparison of the merits of the schools and the teachers. From a cause (unaffected we presume by motives of self-interest,) the establishment which stands *first* in the table of the "Gazette," is the "Aldersgate School," wherein it is stated, that "the students "may attend, during an unlimited period, "all the lectures required by the College "of Surgeons and the Company of Apothe-"caries, for the sum of £46 4s." In an advertisement on the cover of the same number of the Charity Journal, an unlimited attendance on the same lectures is lowered to thirty-five guineas; and if they were rated at what they are actually worth to the student, they would probably be charged in the next advertisement at thirty-five sixpences. When, therefore, we disclaimed the intent to institute comparisons between the different schools, it was not from a disposition to deal unfairly with the Aldersgate concern, for that school must necessarily be excluded from any analogous estimate of the merits of the London establishments. There was, in our opinion, no school with which it could be compared, as we really and truly believed then, and believe still, that it is the worst lecturing concern in the metropolis. Indeed, if one thing could exhibit the infamy of the certificate system in a more odious point of view than another, it is the fact that a public journalist has been enabled to represent to the

medical students of this metropolis, that such a school is the "cheapest in London," and, on that account, especially deserving of their attention.

Now, we would appeal to the judgment of the legislature, to the experience of the profession, to the interests of medical students, to the claims of science and the rights of humanity, and ask, by what trickery and contrivance, by what force or fraud, by what cunning stratagem, medical pupils who have been articled for five years with surgeons in general practice, residing throughout this kingdom, should be *refused* an examination at the College of Surgeons and at the Hall, for the diploma and licence, on presenting the testimonials of the surgeons with whom they have resided, and by whom they have been instructed in the principles and practice of the profession, and yet be *instantly admitted* on presenting the testimonials of the following recognised teachers,—the only teachers, be it observed, in the Aldersgate-street School, who lecture on subjects which are specified in the "regulations" issued by the above Corporations? Observe the curious display:—

Anatomy.....	Mr. Skey.
Physiology.....	Mr. Skey.
Demonstrations.....	Mr. Skey.
Theory of Surgery ...	Mr. Skey.
Practice of Surgery ..	Mr. Skey.
Superintendance of Dissections	Mr. G. A. Rees.
Theory of Physic	Dr. Hope.
Practice of Physic....	Dr. Hope.
Midwifery.....	Mr. Walford.
Botany	Mr. Quekett.
Medical Jurisprudence	Dr. Cummin.
Materia Medica.....	Mr. Pereira.
Therapeutics	Mr. Pereira.
Chemistry	Mr. Pereira.

There! There is an exhibition! Match *that* display, hirelings, if you can. We wait for the attempt. And prove, too, if you can, that your "cheapest" school is not also the worst.

DEBTOR AND CREDITOR ACCOMPT OF AN UNION SURGEON.

"No other class guilty of such crimes against themselves as medical men!"—LANCET, Aug. 6.

To the Editor of THE LANCET.

SIR:—If you have not seen the following statement, take it as another instance of the stupidity of certain members of our profession, when ratifying medical contracts with Poor Law Commissioners, Boards of Guardians, and Medical Penny Clubbists. It affords a decisive proof of the total absence of reflection and judgment evinced by them in their precipitate desire to take office, such as it is. They seem to have completely cut poor "Cocker," as a useless friend in consultation on the *pecuniary* side of the question.

That low-minded jealousy and lamentable want of union in our profession, which you have so often and so ably shown to exist generally, is greatly to be deplored. However, let the surgeon of every Union, both in town and country, not to gratify the readers of THE LANCET, but merely *in common justice to himself, his family*, and, though last, not least, *his creditors*, keep an *exact* debtor and creditor account, similar to the one I now send you. No conjuror will then be required to predict the result of one year's contract, or two at most. Any man of common sense will then be assured of the fact, that *positive ruin* must be the consequence to the more needy members of our profession who engage in the duties of surgeon on the *present terms* proposed by the Poor Law Commissioners, the Boards of Guardians, and the Medical Clubs. I am, Sir,

AN OLD SUBSCRIBER.

(From the Lincoln Journal.)

"The surgeon of an Union of 12 parishes, under the Poor Laws, receives £125 a-year for the following services. For the last six months he has performed the subjoined labours:—

"The average number of miles per day,	21
"Number of nights without being able to go to bed, ...	70
"Number of times called up in the middle of the night, ...	40

"The expenses for the half-year are as follows:—

"Keep of an extra horse, .	£16	0	0
"Assistant's salary, . .	15	0	0
"Board of assistant, . .	12	10	0
"Medicines, and bottles broken and not returned, . .	13	5	0
"Turnpikes, &c. . .	4	0	0
	£60	15	0

"Thus leaving the munificent remuneration of £1 15s. for the attainment of professional skill, and the labour of riding 3962 miles!!"

MEDICAL ATTENDANCE ON THE SICK POOR.

LEIGHTON BUZZARD UNION.

To the Editor of THE LANCET.

SIR:—Permit me to call your attention to what I consider to be an improved and praiseworthy announcement of a plan of medical attendance, which I have just seen advertised for this Union in yesterday's *Times*.

A medical man is to be engaged for the Union, containing 11,800 inhabitants, at a salary, *fixed by the Guardians themselves*, of £200, with apartments, unfurnished, and stabling, at the workhouse; and he is *expected to devote his whole time and attention to the poor*.

I suppose, from the terms of the advertisement, that the candidate is to submit to some examination.

This, Sir, appears to me to be a very satisfactory plan. There is, you will observe, to be no "tender," no contract for the "lowest terms." It is a far more creditable and *dignified* course.

I can give you a few particulars of this Union, which may not be uninteresting, though I can only speak from recollection, and was not aware of its formation until yesterday. I have had the pleasure of knowing the good and venerable vicar of Leighton, now upwards of eighty years of age, who, though he has a poor living, is exceedingly forbearing in requiring the payment of his small vicarial dues from all the poorer classes, and, I am sure, would always be the friend of the needy.

The extreme extent of the Union would, I think, be nine miles by seven. The four places mentioned in Bedfordshire, besides Leighton, are only small chapelries in that extensive parish, which contains nearly 5000 inhabitants, more than half of whom are in the town. The proportion of paupers in this parish is rather considerable,—more so than in the others. The eight or nine Buckinghamshire villages vary from 800 or 900 to 1000 inhabitants, and are of tolerable respectability. The roads are sufficiently numerous, and pretty good, though there are occasional floods in the winter.

From all these circumstances, I should think that the poor in this Union will be *well* attended. Whether the salary is sufficient to remunerate the medical man, with the conscientious use of drugs, and the keep of a horse, you know better than myself,—a non-medical correspondent. Perhaps board, and the keep of a horse, would be as well added. But it seems more liberal than in many other cases; and there are very creditable and *imitable* circumstances in the whole transaction. I shall be very glad to see your opinion upon it. I am, Sir, your obedient servant,

BEDFORDIENSIS.

Oct. 12, 1836.

P.S.—I will hope, from the above, that the "Dietary," also, of these paupers is of an humane character, as I am sure you will agree with me that *some* which have been promulgated are much to be regretted and deprecated.

*** Undoubtedly the above mode is infinitely preferable to the Farthing Clubs, and far more just to the surgeon; but the profession will at once see that it is not divested of very important disadvantages. The subject, however, does not admit of discussion in the space which we could at present devote to it.

REGISTRATION OF BIRTHS AND DEATHS.

To the Editor of THE LANCET.

SIR:—The total want of accurate information regarding the causes of deaths in this country, materially retards the science of medical statistics. It is, therefore, extraordinary, that the opportunities which are now offered to the medical profession to ensure the most accurate accounts, by taking the registration into their own hands, under the new Act, should (as in many instances has been the case) be refused. Probably it is apprehended that the trouble would far exceed the remuneration; or the important aid which it is now in our power to render to science, may not be considered. If the former be the objection, it may be because the circumstance has been overlooked that no person can obtain burial without obtaining the registrar's certificate. This ensures to the registrar immediate information of every death, without his having to seek for it, and children unregistered within six months of birth will not be legal inheritors of property. There can, therefore, be no doubt of the registrar having, without trouble, notice of all births save those, perhaps, of the absolute paupers, and of them intelligence can be readily obtained through the relieving officer of the district. In the latter case, were the registration in the hands of our profession, the following facts, important to the public health, might be ascertained in any given population:—

1. The number of deaths, by diseases, which are known to attend particular professions and trades.

2. The number and nature of the fatal diseases of particular districts, or localities, in comparison with those of other districts.

3. The rare fatality of some maladies, and the frequent fatality of others.

The remuneration (payable by the Board of Guardians) is 2s. 6d. each for the first 20 entries in every year, and 1s. each for

every succeeding entry, with an additional 5s. for the registration of every birth of which the registrar has not had notice within 42 days. But the office of registrar ought to be considered less in a pecuniary point of view than as a means of advancing medical science. In foreign states, where the registration of births and deaths is chiefly confided to medical men, the most beneficial results are known to ensue, while our statistics are notoriously deficient. I am, Sir, your obedient servant,

T. G.

Kingston, Sept. 20th, 1836.

DESCRIPTION OF

AN HERMAPHRODITE,

KNOWN UNDER THE RESPECTIVE NAMES OF "MARIE DOROTHEE DERIER," AND "CHARLES DURGE,"—BY PROFESSOR MAYER, OF BONN.

We extract the following highly curious case from a recent number of the *Gazette Médicale* of Paris, No. 39. The details are given by the German professor with a minuteness which it might seem unnecessary to repeat, but, like our Parisian cotemporary, we prefer presenting them in full, as they throw light on the real nature of an individual who for several years has excited public curiosity in the most remarkable degree; they seem, moreover, to determine a question which has long been debated in natural history, viz., the possibility of the existence of male and female organs in the same person.

The subject of this case has been known to the medical world for more than 30 years: at first, under the name of MARIE DERIER, and latterly, under that of CHARLES DURGE. The individual was born at Berlin, or Potsdam, in the year 1780, and baptised as a girl. At the age of 20, the person (whom we shall call *he*) still preserved the habits and dress of the female sex, and it was at this period that we find his name mentioned for the first time in the annals of science. Hufeland speaks of him in his journal, (1801), and seemed to incline in favour of the predominance of the female sex over the male.

Derier now became a modeller in wax, and after having passed through most of the German universities, visited France, England, and Holland, during the years 1816 and 1817, where he was employed as modeller for several of the museums. He was examined by a great number of physicians, and other learned naturalists, during his travels; most of them, particularly Kopp, Kausch, Mursina, Rosenmüller, Osiander, Lawrence, Green, and the Members of the Faculty of Medicine at Paris, declared him to be a man, while Hufeland, Gall, Brooks, &c., pronounced him to belong to the feminine sex. Some other anatomists, South, Schneider, Schmidtmüller, and Ritgen, thought that he did not belong exclusively to either sex. Even the different parts of his body were at one time referred to the male type, and at another time to the female. The pelvis was the only part which was very generally considered as the pelvis of a female; yet, as we shall presently see, the inspection of this part after death proved the contrary.

Being influenced by the opinion of the majority of medical men whom he consulted, and, impelled by a species of vanity, Derier resolved on adopting the dress and habits of a male, and, accordingly, changed his name to that of CHARLES DURGE, under which he was known at Bonn, from 1820 to the period of his death in 1835. During this latter period, 15 years, he was constantly under the eyes of Professor Mayer, who informs us that Durgé always affected to rank himself amongst the men, though he showed a certain prediliction for females, without, however, feeling any sexual desire. His character was a mixture of the male and female type. On the one hand, he possessed courage much beyond his bodily force, and loved dominion; on the other, he evinced considerable manual dexterity, and was animated with mild and affectionate sentiments. During the last few years of his life, he did not present any trace of sanguineous discharge from the genital organs, a phenomenon which, it appears, manifested itself three times during his 20th year. However, he became subject to epistaxis and hæmorrhoids. He never had any nocturnal emissions of semen. As age advanced, his voice became more firm and grave; a slight trace of beard made its appearance, his teeth fell out, and his head and face presented the aspect of those of an old woman. His neck was short; his chest fat and full: his arms and legs were set on in the direction of the members in a female; his height was exactly 5 feet.

At the age of 38, his constitution underwent a total change. He became fat, and his health continued perfect, with the exception of a slight attack of nervous fever at the age of 40. For three years before his death, his memory began to fail, and he lost all taste for his ancient occupation. Finally, he was cut off by a violent attack of apoplexy, in the month of March, 1835.

Autopsy.

External Habit.—Length of the body, five feet; length of the upper extremities, from the condyle of the humerus to the end of the middle finger, 2 feet 4¼ inches; lower extremities, from the trochanter major to the

heel, 2 feet, 10¼ inches. The form of the head was feminine and small; the forehead was narrow and low; very little hair existed; the beard was slight, the neck short, the larynx not prominent, the breadth of the shoulders 1 foot 2 inches; the thorax narrow above, and short; the breasts were pretty well developed, but no nipple existed. The pelvis was not broad, nor was the pubic arch rounded; the arms and legs were curved, as in the female.

Internal Organs.—The tongue short and rounded; the papillæ elongated, and much developed; the os hyoides small and ossified; the thyroid cartilage was very narrow, and did not project much; the thyroid gland was voluminous; the superior and inferior thyroid cornua were very long; the crycothyroid ligament and the cricoid cartilage were strong and developed; the epiglottis was broad and short, the cavity of the larynx small, but the chordæ vocales were proportionably thick and strong; the trachea narrow; the lungs small, the right one divided into lobes only by an imperfect fissure; the left lung adhered to the wall of the thorax, the pericardium, and the diaphragm; the right lung was healthy, and contained some arthritic concretions, not larger than a pea; the left lung contained a larger number, especially near the inner edge of the upper lobe.

The *heart* was large, broad, and round, and resembled the heart of a female. Its structure was normal, the muscular tissue firm, the origin of the great vessels normal.

The *stomach* normal; the *spleen* adhered to the peritoneum, and was excessively small, 2 inches 10 lines long, 1 inch 8 lines broad. *Liver* middle-sized. *Intestinal canal* normal; cæcum large.

Breasts not much developed; no distinction of glandular granulations; in their place was found a quantity of a yellowish fatty matter, arranged in small globules; the nipple projected very slightly, and was penetrated by several small openings, the mouths of sebaceous crypts. The *kidneys* were oblong, narrow, and small; the renal capsules normal.

The *cerebrum* was particularly small (estimating the whole brain) and presented exactly the form and organization of that part as seen in the female; it was rounded, and symmetrically convex; the lobes not very prominent; the convolutions many and narrow; the crura narrow; the pons varolii and the spinal marrow small; the nerves, especially the fifth pair, smaller than in the male.

The *cerebellum* was but imperfectly developed, and was depressed; the right hemisphere was very much smaller than the left, especially in the two ventricular lobules, which had evidently been arrested in their development; its layers, however, were very numerous. The right hemisphere of the cerebrum was also less developed than the left, and the base of the three lobes was excavated. The corpus callosum, short; the thalami, corpora quadrigemina, pineal gland, &c., were small.

The *skull* was thin, but solid; sutures not effaced; bones of face slightly developed, forehead not prominent; summit of skull, and the occiput containing the posterior cerebral lobes, capacious; eminences corresponding with cerebellum not well marked; the left most prominent.

Vertebral column regular, but feeble; 3d to 7th left ribs had been fractured, and nearly consolidated; at those points the pluera adhered intimately to the lung; the whole thorax narrow, especially in the middle; the bones of the arms were proportionately stronger than in the normal state, but were feminine in character, especially the clavicle and scapula. The former was short, slight, and much curved. The fore-arm formed a marked angle externally with the upper. Hand small and feminine. Lumbar vertebræ, small; sacrum still smaller; sacro-vertebral angle but little prominent.

The pelvis solid and strong, narrow, and most evidently masculine. Transverse diameter from one crista ilei to the other, nine inches; from one antero-superior spine to the other, 7 inches 3 lines; antero-posterior diameter of inlet, 3 inches 3 lines; transverse diameter, 4 inches 5 lines; oblique ditto, 4 inches; trausverse diameter of outlet, 3 inches 3 lines; antero-posterior, 2 inches 6 lines. Symphisis pubis long and narrow; arch of pubis masculine, and forming an angle of 65 deg.; the lateral portions of the ileum had a vertical direction; cotyloid cavities flat, and turned forwards; the whole pelvis was oblique, and rather unequal, the right moiety being smaller and narrower than the left. Neck of femur very short; trochanters feeble; knees curved a little inwards.

Genitals.—Mons veneris not much rounded off; little pubic hair, and not ascending to the umbilicus, and but little about the anus and perineum. The length of the penis to the corona glandis was two inches; glans, nine lines; the greater part of the penis was concealed underneath the mons veneris; corpora cavernosa pretty well developed; each had a perpendicular diameter of eight lines, and a transverse one of four lines; they were separated by a septum; no corpus spongiosum; the prepuce covered only half the glans; a little below the extremity of the glans was a fossa, from which an imperfect canal commenced to represent the urethra, split into two; it was formed by two folds of skin, which separated from each other posteriorly, and might be compared to nymphæ. This demi-canal led to a round opening, not larger than a quill, whose posterior edge was formed by a puckering of the skin of the labia majora, while a smooth

shining, mucous membrane formed its anterior edge; this latter part received the two longitudinal cutaneous folds already described as bounding the demi-canal which represented the urethra. At the inferior edges were some bodies, apparently vestiges of the caruncule myrtiformes. The circular opening led into a vestibule, eight lines long, which, again, led upwards into the canal of the urethra, and communicated below with a larger canal, representing the vagina. The septum, here separating the vagina from the canal of the urethra, was then of a semi lunar form, and placed horizontally. The canal of the urethra was at the root of the penis, and surrounded by a firm, though small prostate. The neck of the bladder, and the bladder itself, were normal. The canal representing the vagina was composed of a delicate mucous membrane, with little muscular fibres mixed through it; it contained a greenish mucus. The entrance was surrounded by a vascular ring of varicose veins, which ascended between the vagina and the urethra, and were gradually lost there.

The length of the vagina was 2 inches 8 lines; its greatest breadth, 10 lines; its narrowest, 6 lines. Its inner surface was somewhat wrinkled anteriorly; behind, it was smooth, but it contained several small, wart-like, bodies and cicatrixes. The vagina terminated above by a *cul de sac*, or sort of spongy isthmus, from 4 to 6 lines in length, Behind this body, which represented the blind orifice of the uterus, commenced the uterus itself. That organ, continuing in the oblique direction of the vagina, ascended between the bladder and the rectum, directing itself from right to left; its fundus thus rested on the left side of the bladder.

The uterus was extremely narrow: it was 2 inches 6 lines in length. The examiners could distinguish a body and a neck. The inner surface of the latter presented merely some slight folds, and several spots of a yellow-brown colour; its cavity, which contained some gelatinous mucus, would scarcely contain a quill; the fundus was somewhat more large, and was nearly half an inch across; the body of the uterus presented some well-marked lines, and numerous hydati-formed vesicles, mixed here and there with yellow spots.

The two fallopian tubes opened exactly in the fundus uteri. They were of unequal length; the left one was 3 inches, 4 lines long; the right, 4 inches, 4 lines. Their canals were small, but quite permeable so far as the abdominal end, which terminated in a blind point (*cul de sac*). The corpora fimbriata existed, and several strong muscular fibres were remarked passing from the fundus uteri to the inguinal rings, which they traversed, and were lost finally in the skin of the mons veneris.

On the right side, near the free extremity of the fallopian tube, was a small, oval, flattened body, which received a chord, composed of muscular fibres and vessels. It was completely enveloped in peritoneum. It resembled a small almond in shape; its tissue was composed, evidently, of a soft, yellow, filamentous structure, in every way similar to that of a testicle; the seminiferous tubes could be easily separated, and the spermatic vein and artery could be recognized in the chord. On the left side, behind, and a little outside the abdominal end of the tube, was also found a small, flattened body, enclosed in the peritoneum: its tissue, however, was granular, being composed of small granules, conglomerated together, and resembling an ovary rather than a testicle.

Here, then, we find attributes of the male and female united in the same individual. On the one hand, a testicle, a penis, and a prostate; on the other hand, a uterus, with fallopian tubes, a vagina, and an ovary.

M. Mayer also directs our attention to the great want of development of one of the hemispheres of the cerebellum, an anomaly which Gall suspected twenty-five years before, from the indifference which this individual always manifested towards either sex.

LONDON MEDICAL SOCIETY.

Monday, Oct. 10, 1836.

Dr. Whiting, *President.*

HAHNEMANNISM.—DR. BELLUOMINI.

This society has re-commenced its meetings, and this evening the room was crowded to excess, in consequence of a notice that Mr. Kingdon would read a paper on "Homœopathy," and infinitesimal doses of medicine.

Mr. Kingdon stated to the members, that he appeared before the Society with this paper, because, as they had been informed, he had employed minute doses of medicine in some instances, and he thought it better at once to introduce the subject, in order that it might be fully discussed. He did not come there to advocate the system of Hahnemann, but merely to state his (Mr. K.'s) experience in the matter, and he pledged his honour that the effects produced *appeared* to have been as he would state. Several gentlemen in the city, whose time was of importance, and who wished to get well with as little inconvenience as possible, had continually asked him to try these remedies.* At length he consented, and sought

* Lancet, Vol. I., 1835-6, p. 755.

an introduction to Dr. Quin, for the purpose of making enquiry into the matter. He found this gentleman a most honourable and well-educated man, and ascertained from him that almost inconceivably small doses of medicine were employed. He (Mr. K.) could not at first conceive that any one could believe that such doses could control disease, and continue their action, as stated by Hahnemann, for a long period on the system. He, however, determined on trying these medicines, as, at least, they could do no harm. Mr. Kingdon then detailed several cases, commencing with some in which he had given *Matacaria camamilla*. This is recommended as an excellent remedy in toothach, when the jaw is inflamed. The dose, applied to the tongue, in a globule mixed with sugar and starch, was the 20th part of a quadrillion (of a grain?) He had a patient with inflamed jaw, and excruciating toothach, constipated bowels, and fever. He gave him a brisk purgative, and all the symptoms but the pain in the jaw went in the course of a day or two. He then placed a globule of the camamilla on the tongue, and it relieved the pain in a few hours. In a similar case, it completely relieved the patient in half an hour, though the suffering had been agonizing for two or three days and nights before. He had also found it most effectual in several cases of teething, the diarrhœa accompanying which, almost directly subsided, healthy stools following. A gentleman subject to diarrhœa, who always carried opium with him for its relief, was more relieved by a dose of the camamilla than by any thing he had ever before taken, and now he carried a globule about with him instead of the opium. He had given it to a man who had some affection of the head, which caused him to stagger about as if drunk, and who had been deaf for four or five years. These symptoms had baffled all attempts at cure with leeches, setons, &c., but this medicine, in ten days, made the man better, though still remaining deaf. But *phosphorus* is said to cure deafness, so 1-20th decillion of the latter was given, and completely cured him. The expressed juices of the *Aconitum napellus* and *Belladonna* plants in Hahnemannic doses, were of great effect in inflammatory eruptive fevers. The first was to be given at the commencement of the attack, the second when the eruption appeared. In five most severe cases of scarlet fever, he considered that these medicines had had most astonishing effect, completely curing the patients in the course of a few days. He had tried the same remedies in a most severe case of quinsey, with wonderful effect. *Coffee*, diluted a millionth, was an excellent sleeping potion, but it was effective only in those cases which arose from restlessness of the mind. He had given it to a young clergyman affected in this way, and having a dull headach. On the night on which the coffee was given, he slept excellently. The dose was repeated with the same effect, and he continued to have good nights, even after the remedy was discontinued. After a time, however, he caught cold, and became subject to great forgetfulness, for which *phosphoric acid* is effective, and after another "coffee" had been given to procure rest at nights, he took the acid in a trillionth dilution, and was better in five days. Phosphoric acid is said to keep up its effects for forty days. Coffee is of no use in procuring sleep when the brain itself is diseased. *Sulphur* he had employed with great success in cases of obstinate costiveness, when no other medicine succeeded, a billionth part of a grain being given. In the case of a gentleman who had great pain at stool, and voided large quantities of blood, with pain in the stomach, and excessive weakness, he had employed a decillionth of *nux vomica*. It was repeated for nine days, and the patient was made well. This is also a favourite remedy in affections of the stomach, where there is pain at the scrobiculus cordis. He (Mr. K.) had, however, seen as many cases in which these medicines had done no good, but, then, neither had the other usual doses of medicine. He had not paid strict attention to the plan of the Hahnemannists, such as looking at the position of the patient's body, his temperament, &c., then referring to the book, and ascertaining what medicine would produce such position, &c. In conclusion, he would say, he thought the subject worthy of discussion, for so far as his experience went with these medicines, he was convinced that some diseases either did better without medicine at all, or that these small doses had a great influence on the system. He was not an Homœopathist, but he was sure that the employment of aconite would save, in many cases, the use of the lancet. The patients in none of the above cases knew that they were taking a new medicine.

Dr. JOHNSON said, the facts he had heard could scarcely be exceeded in wonder by the resurrection of the dead. They were contrary to all human reason and experience, and were therefore miracles. One thought had struck him regarding the "similia-similibus-cureatur" doctrine, and that was, that as one remedy was said to cure various diseases, so it ought also to produce them. Would phosphoric acid produce forgetfulness? It was said to cure it; the negative facts should also be given. He should like to know how forgetfulness was produced, except by sleep and opiates. What was the pathology of the disease, and for what *reason* was phosphoric acid given to relieve it? If the pathology was not known, he contended that the remedy was not known. And as to coffee, every one knew that it prevented sleep. Mesmerism and mineral

magnetism were follies, compared with Hahnemannism.

Mr. KINGDON had given the coffee because it was recommended; he knew it could do no harm, and the man who took it was bordering on insanity. As to the "cause and effect," that was another matter.

Dr. UWINS contended that he was not an Homœopathist, and he had to complain of reviewers stating that he had gone mad on Homœopathy. He had been disappointed in Mr. Kingdon's paper. Mr. K. ought, in fairness to the infinitesimal doses, to have stated their positive effects, which every one with common perception might see. He (Dr. U.) had published a book on the subject, and a baronet who had gone to buy it that very day, had said that Dr. Belluomini had not been treated with common courtesy as a foreigner. He had been treated like a blackguard by the press. ("No, no!" from *Dr. Johnson;* "treated as he should be, for refusing to co-operate with his medical brethren.") B. had attended the baronet's sister, and cured her of spasmodic asthma in an astonishing manner. Dr. Uwins here related a case of most violent tic-douloureux, which had given way before a few globules of belladonna. The pain was increased to a great extent for twelve hours, but afterwards became relieved, and the patient is now quite well. *Aconite* was useful in exanthematous affections of the skin. If medical men would use it more frequently, their lancets might go to rust. *Sulphur* was useful in anomalous eruptive diseases of the skin. He felt convinced, that in ten years the present materia medica and pharmacologias would be regarded as obsolete and by-gone matters. (*Some laugh er.*) He contended that Hahnemann was worthy of the thanks of the profession for his unwearied industry in ascertaining the properties of medicines, and his plan should not be put down by derision.

Mr. HEADLAND considered that, as infinitesimal portions of matter would produce hydrophobia, syphilis, &c., it was just as reasonable to consider that infinitesimal doses of medicine might be effective in counteracting disease. He was not a convert to homœopathy, but he would assert that a knowledge of it had given him a power over disease which he did not before possess. He had an insane patient, who had subsultus tendinum to so great a degree, that it almost amounted to chorea. He (Mr. H.) knew of no allopathic doses which would relieve this, so he gave strychnine in very minute doses, and the subsultus was entirely relieved. His doses were larger than generally given by Hahnemann. He (Mr. H.) dissolved 1 grain of stychnine in 12 drachms of distilled water, and gave 12 drops three times daily. Aconite, followed by belladonna, he had found to produce most remarkable effects in scarlatina. He considered the doctrines of Hahnemann to be worthy of calm deliberation by the Society, and he thought that silly and trashy remarks, like some which had appeared in a medical periodical last week, and had been copied, into one of the newspapers, were very contemptible. The article in question throughout consisted of mere assertions. Facts only would weigh with men of science.

The question was then adjourned.

NORTH LONDON HOSPITAL.

INJURY OF THE HEAD.—TREPANNING.

HENRY NORVAL, aged 11, was admitted on September 16th, under the care of Mr. LISTON. Eleven weeks since, while riding in a cart laden with ginger-beer, the vehicle was upset, and the man received two wounds in the head, from the broken fragments of the stone bottles. One wound was situated on the posterior, the other on the anterior superior part of the head. The posterior wound was an incised one. It is now healed. The anterior was a punctured wound, from which was taken an angular piece of bottle, and it now continues to discharge matter. He was insensible for one week after the accident, from which state he recovered by degrees, so that at the end of one month he was able to walk about; but, a few weeks afterwards, he lost the power of speech for three days, which he recovered on a profuse discharge of matter from the wound, and vomiting, taking place. No bone has been discharged. He has had several attacks of insensibility, the duration of them varying from two or three to twenty-four hours.

Mr. LISTON examined the anterior wound with a probe, which could be passed one inch and a half into the wound, almost in a perpendicular direction, showing that an opening existed in the bone. He was of opinion that some portion of the bone was depressed, or that the inner table was fractured, and perhaps loose on the dura mater, which was the cause of the profuse flow of pus, and the symptoms above detailed.

(*To be concluded next week.*)

TO CORRESPONDENTS.

The account of an examination, in Latin, which was undergone by a candidate for the licence of the Apothecaries' Company, on Thursday evening, the 13th inst., in which Mr. John Hardy, apothecary, of Walworth, figured as chief perplexer, was received too late for insertion this week, but it shall appear in full in the next LANCET.

Errata.—In Professor Sharpey's lecture, p. 82, line 4, for *post* read *position.* In leader, p. 103, col. 2, line 8, for *London Hospitals,* read *North London Hospital.* In Mr. Searle's paper, last vol. p. 858, col. 2, line 18, for *always* read *often;* p. 865, line 48, for *will in general,* read *will not in general.*